90006



# SITE ASSESSMENT REPORT
# FOR
# DAVID CHEMICAL
# CHICAGO, COOK COUNTY, ILLINOIS
# TDD#: T05-9405-010
# PAN#: EIL0838SAA

ecology and environment, inc.
International Specialists in the Environment

SITE ASSESSMENT REPORT
FOR
DAVID CHEMICAL
CHICAGO, COOK COUNTY, ILLINOIS
TDD#: T05-9405-010
PAN#: EIL0838SAA

JULY 11, 1994

Prepared By: Sally J. Jones Date: 7/11/94
Reviewed By: Michelle L. Foster Date: 7/11/94
Approved By: [signature] Date: 7/11/94

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International Specialists in the Environment

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## 1.0 INTRODUCTION

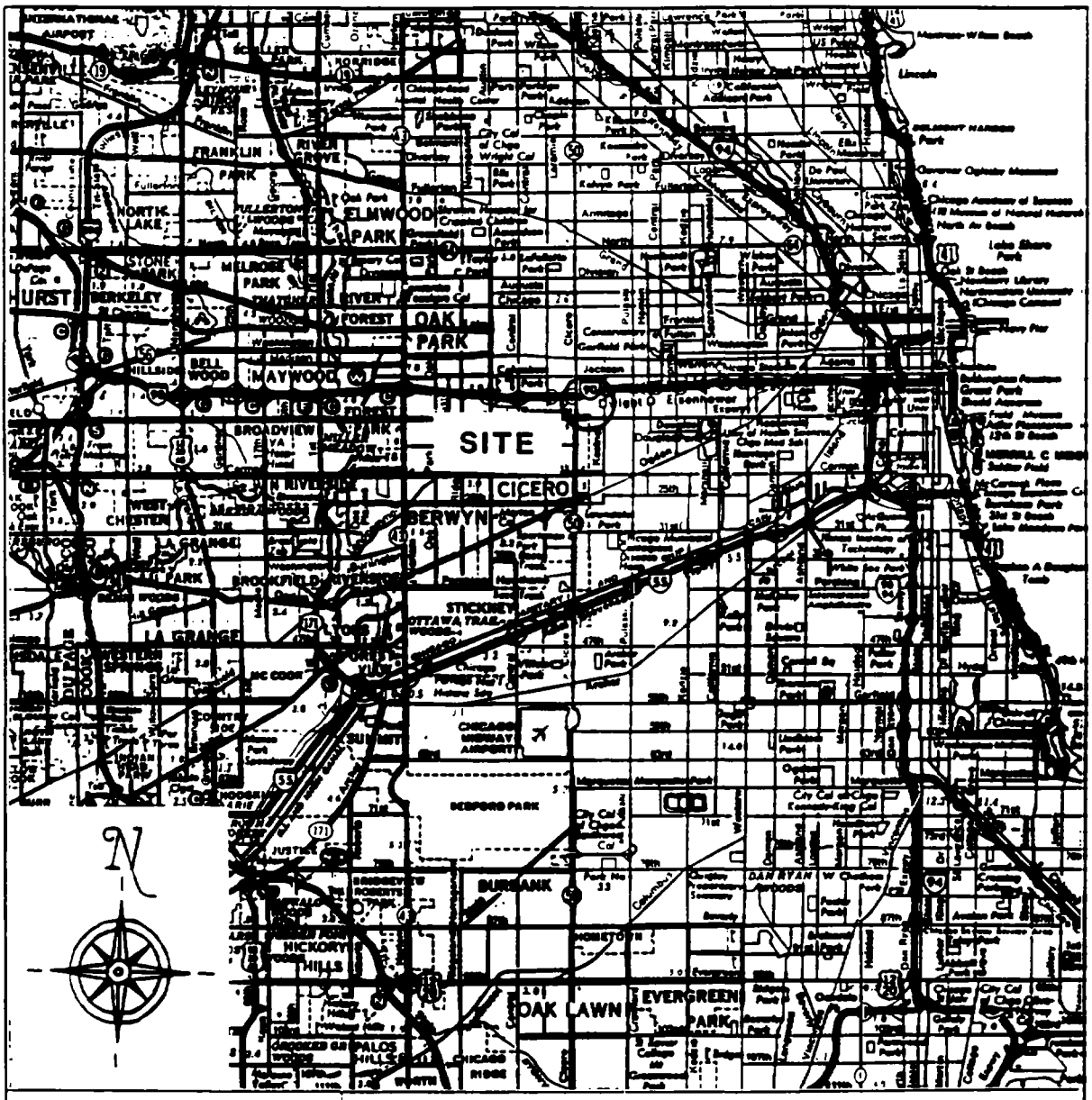
On May 17, 1994, the United States Environmental Protection Agency (U.S. EPA) tasked the Ecology and Environment, Inc. (E & E) Technical Assistance Team (TAT) under Technical Directive Document (TDD) T05-9405-010 to perform a site assessment at the David Chemical Site located in Chicago, Cook County, Illinois. The TAT assisted the U.S. EPA On-Scene Coordinator (OSC) with air monitoring, sample collection, and documentation of events and site conditions during the assessment. The assessment was conducted on May 27, 1994, to evaluate the threats to human health and the environment posed by the site.

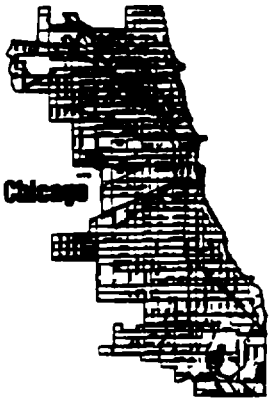
## 2.0 SITE DESCRIPTION

The David Chemical (DC) site is an active chemical manufacturing and storage facility located at 4650 Fifth Avenue in Chicago, Cook County, Illinois (latitude 41°51'30", longitude 87°46'30"). Refer to Figure 1 for site location. The site consists of a main building which houses approximately 300 drums and small containers. The DC site is situated in a mixed residential/ commercial area with Fifth Avenue defining the site's south boundary (see Figure 2). A railroad yard is located to the south across Fifth Avenue. The site is bordered to the west by Kilpatrick Avenue, to the north by G.F. Structure, and to the east by Joe's Drums. An warehouse building is located to the west across Kilpatrick Avenue. An easement directly adjacent to the north side of the site separates David Chemical and G.F. Structure. G.F. Structure also utilizes a fenced area adjacent to the west side of David Chemical for the storage of aluminum barricade material. A residential neighborhood is located approximately 1 block northwest of the site on Arthington Street and Sumner Elementary school is located 3 blocks to the northeast.

## 3.0 SITE BACKGROUND

The DC site is currently owned and operated by a private citizen. According to the owner, site operations began in 1987 and included the manufacturing of cleaning agents and detergents for sale and distribution to plating facilities, automatic car wash operators and portable toilet companies. DC utilized sodium bisulfate, proprietary chromic acid, chlorinated compounds (mostly water), and industrial dyes and perfumes in the cleaning agent manufacturing process. The proprietary chromic acid was obtained from Precision Chrome, an electroplating facility located in Fox Lake, Illinois. The cleaning agent manufacturing process was discontinued in 1993; however, DC continues to manufacture detergents on-site. Phosphates, bleach, and sodium nitrate are utilized in the detergent manufacturing process.

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Technical Assistance Team
Region V

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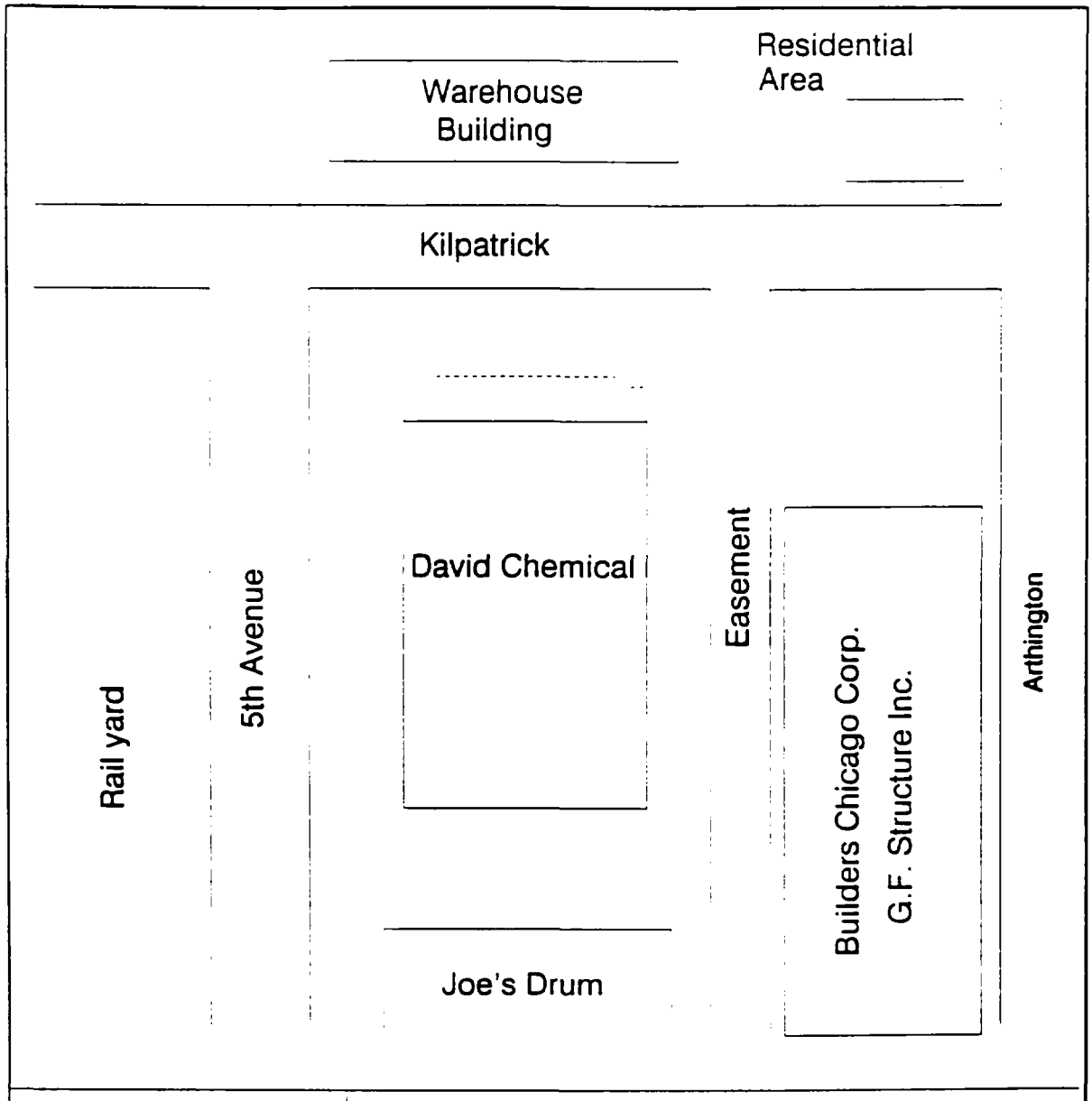
| | | |
|---|---|---|
| TITLE: Site Location Map | | FIGURE #: 1 |
| SITE: David Chemical | | SCALE: not to scale |
| CITY: Chicago | STATE: Illinois | PAN: EIL0838SAA |
| SOURCE: E & E, Inc. | | DATE: 5/25/94 |
| | | REVISED: |

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Region V

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| | | |
|---|---|---|
| TITLE | Site Features Map | FIGURE # 2 |
| SITE | David Chemical | SCALE not to scale |
| CITY | Chicago STATE Illinois | PAN EIL0838SAA |
| SOURCE | E & E, Inc. | DATE 5/25/94 |
| | | REVISED |

Fluorboric acid is also reportedly used to adjust the pH of the products.

In September 1993, the Illinois Environmental Protection Agency (IEPA) conducted a site investigation at the DC site. The IEPA first learned about the site while investigating Precision Chrome, and subsequently discovered waste was shipped to and stored at David Chemical. The IEPA completed a site reconnaissance and sampling activities at the site. The IEPA reportedly observed several inches of free liquids on the floor inside the building which were leaching out from under a garage door onto Fifth Avenue. In addition, label information on numerous drums indicated hazardous substances were being stored in the building.

The IEPA collected samples from various drums and standing water on the floor. Analytical results from these samples indicated toxicity characteristic leaching procedure (TCLP) chromium concentrations of 490,000 mg/l in the drums of proprietary chromic acid and 4,000 mg/l in material on the floor respectively. A sample was also collected from the material leaching out from under the garage. Analytical results revealed TCLP chromium at 880 mg/l. In addition, IEPA reported that the pH of the floor sample was less than two standard units. Comprehensive analytical results from IEPA sampling events were unavailable at the time this report was prepared.

In April 1994, the IEPA contacted the U.S. EPA Emergency and Enforcement Branch (EERB) to report David Chemical for illegal storage and use of hazardous substances and materials. The State of Illinois is currently pursuing legal action against DC for violations under the Resource Conservation and Recovery Act (RCRA). David Chemical does not hold a RCRA permit.

## 4.0 SITE ASSESSMENT

At 0830 hours on May 27, 1994, U.S. EPA On Scene Coordinator (OSC) Pete Guria, and E & E TAT members (TATms) Sally Imes, Michelle Jaster, and Mike Mangini arrived at the DC site in Chicago, Illinois. Upon arrival, the OSC and TATms were greeted by the site owner. The OSC and TATms conducted an on-site safety meeting and prepared to enter the building for a site walkthrough.

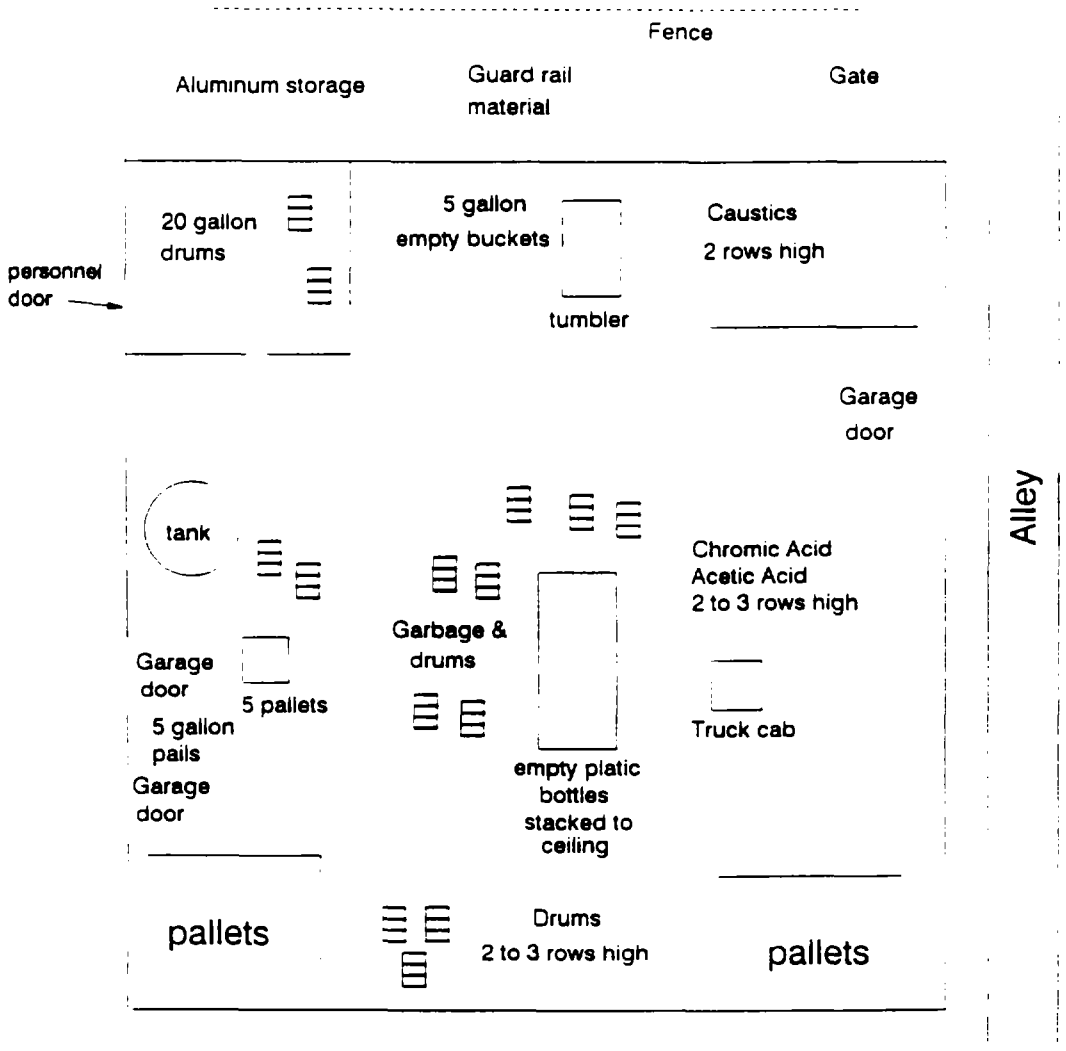
At 0900 hours TATms Imes and Jaster entered the building in Level B personal protective equipment to perform preliminary air monitoring. TATm Mangini remained at the door of the building as a backup. Real-time air monitoring was conducted for oxygen, lower explosive limit (LEL), hydrogen cyanide (HCN), organic vapors and radioactive materials. Oxygen level and LEL were measured utilizing a MSA 260 combustible gas indicator (CGI). A

chemical specific (HCN) monitox gas detector and Photovac Microtip photoionization detector (PID) were utilized to detect HCN and organic vapors respectively. TATms also conducted a radiation survey for gamma rays utilizing a Victoreen Thyac III. All instruments were calibrated according to manufacturer recommendations before entering the building. Organic vapor readings were detected between 4.5 and 12.6 parts per million (ppm) in the breathing zone. In addition, monitoring was conducted for organic vapors at the bung opening of a drum labeled mineral spirits. Microtip readings peaked at 2,500 ppm. No other readings above background were detected on any other air monitoring equipment.

After evaluating real-time air monitoring results, TATms Imes and Jaster, and OSC Guria re-entered the building in Level C personal protection to document chemical information and site observations, and to determine sampling locations. The OSC and the TATms observed approximately 300 drums and small containers stored within the site building. Drums were stored on wooden pallets on top of each other, some stacked three and four high. A majority of these drums were staged along the perimeter walls of the building (see Figure 3). According to the owner, and drum labels documented during the assessment, the following chemicals were present on-site: fluorboric acid, proprietary chromic acid, calcium hypochlorite, sodium hydroxide, caustic beads, acetic acid, gluconic acid, hydrofluoric acid, glycol ether, potassium nitrate, and sodium xylene sulfonate. The site owner informed the OSC the drums were staged according to hazard classes. However, the TAT observed a pallet containing caustic beads (corrosive material) stored in the western portion of the building with a 5 gallon can containing isopropyl alcohol (flammable liquid) on the floor next to the pallet (see Attachment A - photodocumentation).

Wood pallets, miscellaneous drums and small containers, several forklifts and various debris were scattered throughout the building. At the time of the site assessment, several holes in the roof were observed. One hole was located in the northwest portion of the roof and was approximately 20 feet by 20 feet in size. In addition, the hole was directly over drums containing mineral spirits and hydrofluoric acid. Standing water was also observed in various areas on the floor throughout the building. TATms tested the pH of the standing water in the northwest section of the building near drums containing caustic materials. Results revealed a pH greater than 10.0 standard units. After determining appropriate sample locations, the OSC and TATms exited the building to prepare for sampling.

At 1030 hours TATm Jaster and Mangini entered the building to conduct sampling activities in Level B personal protection equipment. A total of 7 samples were collected from drums (D001 thru D003), buckets (BK-01), plastic bags (BG-01), DC detergent

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*Region V*

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| | | | |
|---|---|---|---|
| TITLE | Site Features Map - Detail | FIGURE # | 3 |
| SITE | David Chemical | SCALE | not to scale |
| CITY | Chicago | STATE Illinois | PAN EIL0838SAA |
| SOURCE | E & E | DATE | 5/25/94 |
| | | REVISED | |

product (PR-01), and material present on the floor (FS-01). Drum and sample logs were completed for all samples collected (see Attachment B). General hazardous categorization testing was conducted on all samples in order to assist in determining analytical parameters to be run on each individual sample. All samples were collected and packaged in accordance with U.S. EPA standard operating procedures. Upon completion of sampling, the OSC and TATms departed the site at 1205 hours.

Samples designated FS-01 and D002 were shipped via Federal Express according to Department of Transportation (DOT) regulations to NET Midwest Laboratory in Bartlett, Illinois. As requested by the OSC, sample FS-01 was analyzed for semi-volatile organic compounds, and sample D002 was analyzed for volatile and semi-volatile organic compounds, as well as F listed alcohol compounds. The remaining samples were packaged appropriately and refrigerated, prior to analysis by IEA Laboratories (IEA), Schaumburg, Illinois. IEA provided carrier service on May 31, 1994, and the samples were hand-delivered to the laboratory for total and TCLP metals (8 RCRA), flashpoint, total and reactive cyanide and sulfide, and pH analysis. Specific analytical parameters were assigned for each sample (see Attachment C -- Chains of Custody). All samples were analyzed under Analytical TDD# T05-9405-807. QA Level II data with a 7 calendar day verbal turnaround time, and 14 calendar day hard copy was requested from both laboratories.

## 5.0 ANALYTICAL RESULTS

Analytical results are presented in Tables 1-6. Elevated levels of total chromium were detected in samples D003 and PR-01 at 120,000 and 24,000 parts per million (ppm) respectively. TCLP analytical results indicated chromium levels elevated above the regulatory limit of 5 mg/l in samples BK-01 and FS-01. TCLP chromium levels in these floor sludge samples were detected at 630 and 11 mg/l respectively. Elevated semi-volatile organic compounds, specifically polyaromatic hydrocarbons such as fluoranthene, pyrene, and phenanthrene, were also detected in floor sludge sample FS-01 at levels as high as 4.9 ppm. A total cyanide level of 6 ppm was detected in sample BK-01. Analytical results indicated that samples D001 and D003 are corrosive liquids with pH values of < 1.0 standard units. Analytical results also indicated elevated levels of volatile organic compounds, semi-volatile organic compounds, and F-listed alcohols were detected in sample D002. This sample contained 12,200 ppm methylene chloride, 265 ppm 1,1,1-trichloroethane, 165 ppm toluene, and 138 ppm total xylenes. Refer to Attachment D for complete commercial laboratory analytical results.

**TABLE 1**

TOTAL RCRA METALS ANALYTICAL RESULTS
SAMPLES COLLECTED - MAY 27, 1994

DAVID CHEMICAL
CHICAGO, ILLINOIS

| PARAMETERS | SAMPLE ID NUMBERS | | |
|---|---|---|---|
| | D001 | D003 | PR-01 |
| **TOTAL RCRA METALS** | RESULTS IN (ppm) | | |
| Aresenic | 0.57 | 12 | <0.5 |
| Barium | 0.42 | <0.5 | <0.5 |
| Cadmium | 0.0052 | <0.25 | <0.05 |
| Chromium | 0.33 | 120,000 | 24,000 |
| Lead | 0.5 | <2.5 | <0.5 |
| Mercury | 0.0072 | <0.002 | <0.002 |
| Selenium | <0.1 | <6.0 | <6.0 |
| Silver | <0.01 | <0.5 | 0.14 |

NOTE: Total Metals Analysis performed by: IEA Laboratories
Schaumburg, Illinois.

**TABLE 2**

TCLP METALS ANALYTICAL RESULTS
SAMPLES COLLECTED - MAY 27, 1994

DAVID CHEMICAL
CHICAGO, ILLINOIS

| PARAMETERS | SAMPLE ID NUMBERS | | |
|---|---|---|---|
| | BK-01 | BG-01 | FS-01 |
| **TCLP METALS (Reg. Limit)** | RESULTS IN (mg/l) | | |
| Arsenic (5) | 0.78 | <0.1 | <0.1 |
| Barium (100) | 0.54 | 0.43 | 0.59 |
| Cadmium (1) | 0.0073 | <0.005 | 0.033 |
| Chromium (5) | 630 | <0.01 | 11 |
| Lead (5) | 0.084 | <0.05 | <0.05 |
| Mercury (0.2) | <0.0002 | <0.0002 | <0.0002 |
| Selenium (1) | <0.1 | <0.1 | <0.1 |
| Silver (5) | <0.01 | <0.01 | <0.01 |

NOTE: All analytical results detected above regulatory limits are shaded.

TCLP Metals Analysis performed by: IEA Laboratories
Schaumburg, Illinois.

**TABLE 3**

pH and TOTAL CYANIDE ANAYLTICAL RESULTS
SOLID SAMPLES COLLECTED - MAY 27, 1994

DAVID CHEMICAL
CHICAGO, ILLINOIS

| PARAMETERS | SAMPLE ID NUMBERS | | |
|---|---|---|---|
| | BK-01 | BG-01 | FS-01 |
| pH (standard units) | 9.9 | 3.2 | 7.7 |
| TOTAL CYANIDE (ppm) | 6.0 | NR | NR |

NOTE: NR -- Analytical parameter not run on this specific sample.

Sample FS-01 also analyzed for Reactive Cyanide, Total Sulfide, and Reactive Sulfide. None of these parameters were detected above the appropriate Practical Quantitation Limit (PQL).

All analyses performed by: IEA Laboratories
Schaumburg, Illinois.

**TABLE 4**

pH and FLASHPOINT ANALYTICAL RESULTS
LIQUID SAMPLES COLLECTED - MAY 27, 1994

DAVID CHEMICAL
CHICAGO, ILLINOIS

| PARAMETERS | SAMPLE ID NUMBERS | | | |
|---|---|---|---|---|
| | D001 | D003 | PK-01 | D002 |
| pH (standard units) | <1.0 | <1.0 | 3.5 | NR |
| FLASHPOINT | NR | NR | NR | 115°F |

NOTE: NR -- Analytical parameter not run on this specific sample.

Sample D003 also analyzed for Total and Reactive Cyanide, as well as Total and Reactive Sulfide. None of these parameters were detected above the appropriate Practical Quantitation Limit (PQL).

All analyses performed by: IEA Laboratories
Schaumburg, Illinois.

**TABLE 5**

SEMI-VOLATILE AND ACID COMPOUNDS ANALYTICAL RESULTS
SAMPLES COLLECTED - MAY 27, 1994

DAVID CHEMICAL
CHICAGO, ILLINOIS

| PARAMETERS | SAMPLE ID NUMBER | |
|---|---|---|
| **SEMI-VOLATILES (results in ppm)** | FS-01 | D002 |
| Acenaphthene | 0.36 | <100 U |
| Anthracene | 0.81 | <100 U |
| Benzo(a)anthracene | 2.0 | <100 U |
| Benzo(b)fluoranthene | 1.9 | <100 U |
| Benzo(k)fluoranthene | 1.4 | <100 U |
| Benzo(g,h,i)perylene | 1.1 | <100 U |
| Benzo(a)pyrene | 1.7 | <100 U |
| Benzyl butyl phthalate | 0.4 | <100 U |
| Bis(2-ethylhexyl)phthalate | 3.04 | <100 U |
| Chrysene | 2.2 | <100 U |
| Dibenzo(a,h)anthracene | 0.53 | <100 U |
| Di-n-butyl phthalate | 0.74 | <100 U |
| 2,6-Dinitrotoluene | <0.32 U | 100 |
| Fluoranthene | 4.9 | <100 U |
| Fluorene | 0.42 | <100 U |
| Naphthalene | <0.32 U | 120 |
| Indeno(1,2,3-cd)pyrene | 1.1 | <100 U |
| Phenanthrene | 2.27 | 380 |
| Pyrene | 3.6 | <100 U |
| **ACID COMPOUNDS** | | |
| Phenol | NR | 160 |

NOTE: NR -- Analytical parameter not run on this specific sample.
U -- Analyte was not detected above the level of the associated number, the quantitation limit.
All samples were analyzed by NET Laboratories, Bartlett, Illinois

**TABLE 6**

VOLATILE AND F-LISTED ALCOHOL ANALYTICAL RESULTS
SAMPLES COLLECTED - MAY 27, 1994

DAVID CHEMICAL
CHICAGO, ILLINOIS

| PARAMETER | SAMPLE ID # |
|---|---|
| **VOLATILE COMPOUNDS (results in ppm)** | D002 |
| 1,1-Dichloroethane | 5.5 |
| Ethyl benzene | 21.0 |
| Methylene chloride | 12,200 * |
| Toluene | 165 |
| 1,1,1-Trichloroethane | 265 |
| Trichloroethene | 9.5 |
| Total Xylenes | 138 |
| **F-LISTED ALCOHOLS (results in ppm)** | |
| 2-Ethoxyethanol | 15.6 |
| Methanol | 1.2 |

NOTE: * -- Parameter analysis performed at a 20,000 x dilution.

Sample was analyzed by: NET Laboratories
Bartlett, Illinois.

## 6.0 THREATS TO HUMAN HEALTH AND THE ENVIRONMENT

Conditions observed during the U.S. EPA investigation of the DC site that constitute a threat to human health and the environment and may be used to determine the appropriateness of a removal action as outlined in Section 300.415(b)(2) of the National Contingency Plan (NCP) included:

a) Actual or potential exposure of nearby human populations, animals, or food chains from hazardous substances or pollutants or contaminants;

Potential exposure of nearby populations to hazardous materials exists at the DC site. Analytical results of floor sludge samples collected at the site indicated levels of TCLP chromium above the regulatory limit of 5 mg/l. Chromic acid is a human carcinogen that can be absorbed through all routes of exposure, resulting in severe nose and throat irritation, as well as stomach or kidney problems. Analytical results also indicated the presence of other corrosive acids with pH values less than 1.0 standard units in drum samples D001 and D003. Contact with strong acids can result in severe skin or eye burns, and irritation to the nose, throat, and respiratory tract. In addition, total cyanide levels of 6 ppm were detected in a bucket sample (BK-01) collected from floor sweepings. The presence of acidic and cyanide compounds on the floor could potentially result in the formation of hydrogen cyanide gas, if mixing were to occur. Hydrogen cyanide is a poisonous gas with a low threshold limit value (TLV) of 10 ppm. Analytical results have also indicated the presence of a wide variety of volatile organic compounds, including methylene chloride (12,200 ppm), ethyl benzene (21 ppm), and xylenes (138 ppm) stored in drums at the site. These hazardous substances pose inhalation, ingestion, and direct contact hazards which can potentially result in irritation to the respiratory tract, eyes, and skin. The potential exists for nearby populations to come into contact with these volatile organic compounds, as well as the other hazardous substances previously discussed. The current owner admitted to numerous episodes of vandalism and trespassing at the site. Populations that could potentially be exposed to the hazardous chemicals on-site include workers of adjacent facilities, residents located one block to the northwest, and children from an elementary school located three blocks to the northeast.

b) Hazardous substances or pollutants or contaminants in drums, barrels, tanks, or other bulk storage containers, that may pose a threat of release;

Over 300 drums and miscellaneous small containers (5 gallon or less) are stored at the DC site. Many of these drums are stacked two and three high in an overcrowded warehouse area. Analytical results have indicated that many of these drums contain corrosive

acids with pHs less than 1.0 ppm. The potential exists for the contents of the drums to come into contact with incompatible floor sludges, resulting in a release of hazardous liquids or gases. Analytical results of floor sludges have indicated the presence of elevated levels of TCLP chromium at 11 mg/l, total cyanide at 6 ppm, and various semi-volatile compounds, including fluoranthene, pyrene, and bis(2-ethylhexyl)phthalate at 4.9 ppm, 3.6 ppm, and 3.04 ppm respectively. In addition, the roof of the facility has numerous holes, resulting in the continued exposure of drums and floor sludges to the elements. The IEPA has documented leaching of materials from inside the facility to the street underneath a garage door. IEPA analytical results have indicated that the floor sludges contain 4,000 mg/l TCLP chromium and have a pH less than 2 standard units. Numerous areas of pooled liquid were noted throughout the building during the U.S. EPA site assessment, with one area containing liquid with a pH greater than 10 standard units. Air monitoring conducted inside the building during the assessment indicated elevated levels of organic vapors in the breathing zone.

c) Weather conditions that may cause hazardous substances or pollutants or contaminants to migrate or be released;

The roof of the facility contains several large holes, allowing precipitation to enter the building. According to IEPA personnel, this has resulted in the migration of floor sludges containing elevated levels of hazardous substances outside of the building to the street. Continued exposure of the drums and containers to precipitation could result in the deterioration of the condition of the drums and the leaking of their contents. This could potentially result in the mixing and migration of a wide variety of incompatible materials such as cyanide, strong acids, oxidizers such as chromic acid, caustic liquids such as calcium hypochlorite and sodium hydroxide, and volatile organic compounds such as methylene chloride and xylene, posing a threat to nearby populations.

d) Threat of fire or explosion;

Analytical results of a sample collected from drum D002 indicated a flashpoint of 115°F which is below the RCRA limit for ignitability of 140°F. In addition numerous drums located throughout the building were labeled as flammable material. In some cases, these drums with flammable contents were stored directly adjacent to corrosive materials, creating a fire potential. Due to the incompatible chemical composition of corrosive and flammable materials, mixing may cause spontaneous combustion to occur ultimatley creating an ignition source. Elevated organic vapor levels were noted during air monitoring of several drums and also in the breathing zone within the site. Repeated instances of trespassing and vandalism at the facility, coupled with the presence of numerous drums of incompatible and

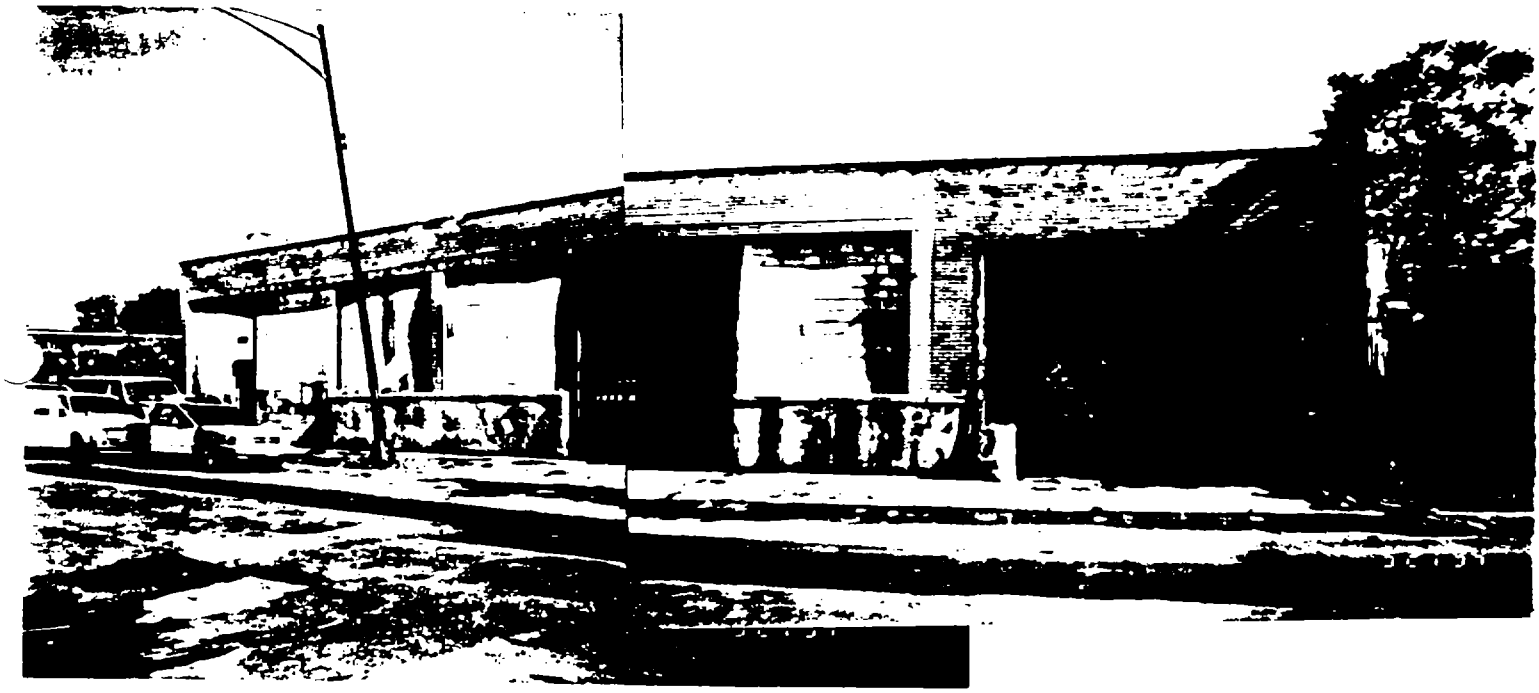
flammable materials, could potentially result in a fire at the site. A residential community is located only one block to the northwest of the site. As a result of a fire on-site, nearby populations would face inhalation, ingestion, and direct contact threats from the hazardous materials stored within the facility.

## 7.0 SUMMARY

A removal action is warranted at the DC site based on the above factors as well as the on-site storage of over 300 drums and small containers containing elevated levels of TCLP chromium, corrosive acids, and volatile organic compounds. The continued exposure of drummed materials and floor sludges to precipitation events through holes in the building's roof could potentially result in additional migration of hazardous substances to the street outside the facility. In addition, there is a history of trespassing and vandalism at the site, and further instances could result in the release of hazardous substances to nearby populations and the environment.

# ATTACHMENT A

# PHOTODOCUMENTATION



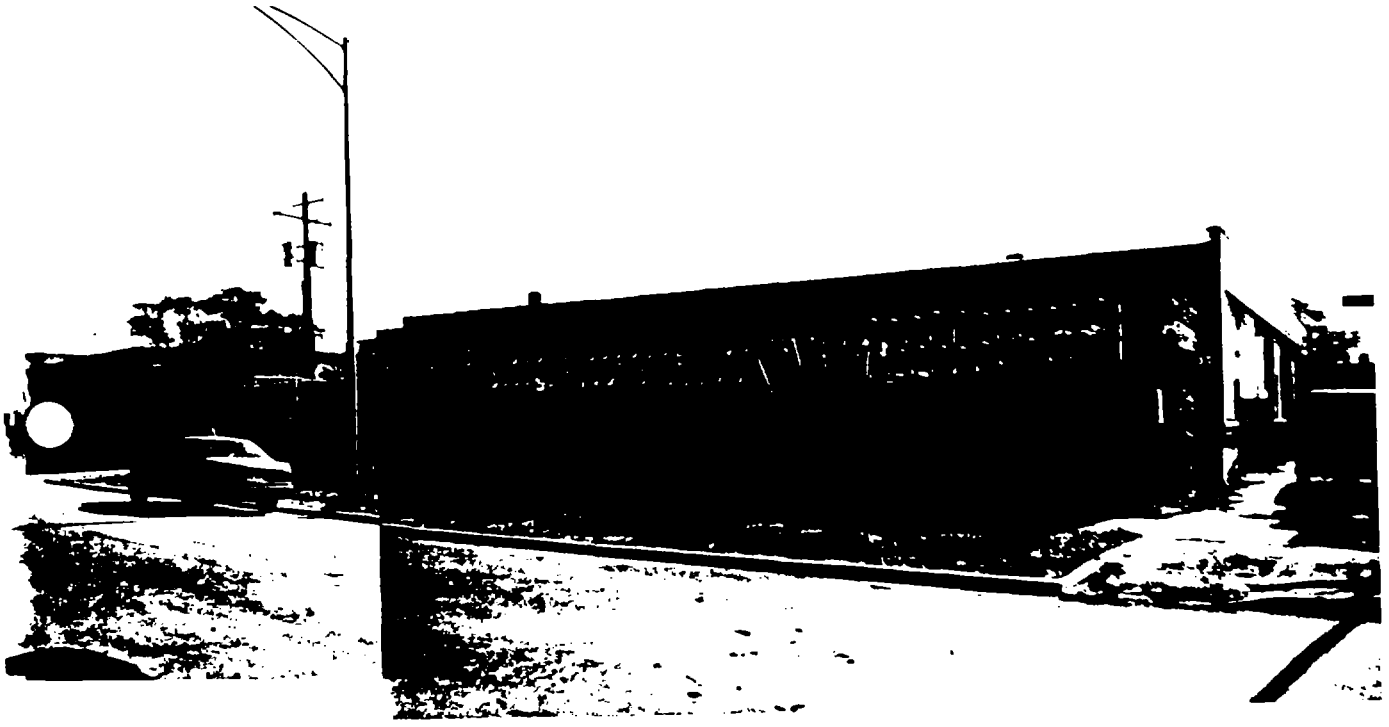
SITE NAME: **DAVID CHEMICAL**
TDD: **T05-9405-010**

DATE: **5/27/94**
TIME: **0830 HOURS**

PHOTOGRAPHER: **SALLY IMES**

DIRECTION: **NORTHWEST**

SUBJECT: **SOUTH SIDE OF BUILDING WHICH HOUSES DAVID CHEMICAL. DAVID CHEMICAL MANUFACTURES DETERGENTS UTILIZED BY CAR WASHES AND PORTABLE TOILET COMPANIES.**



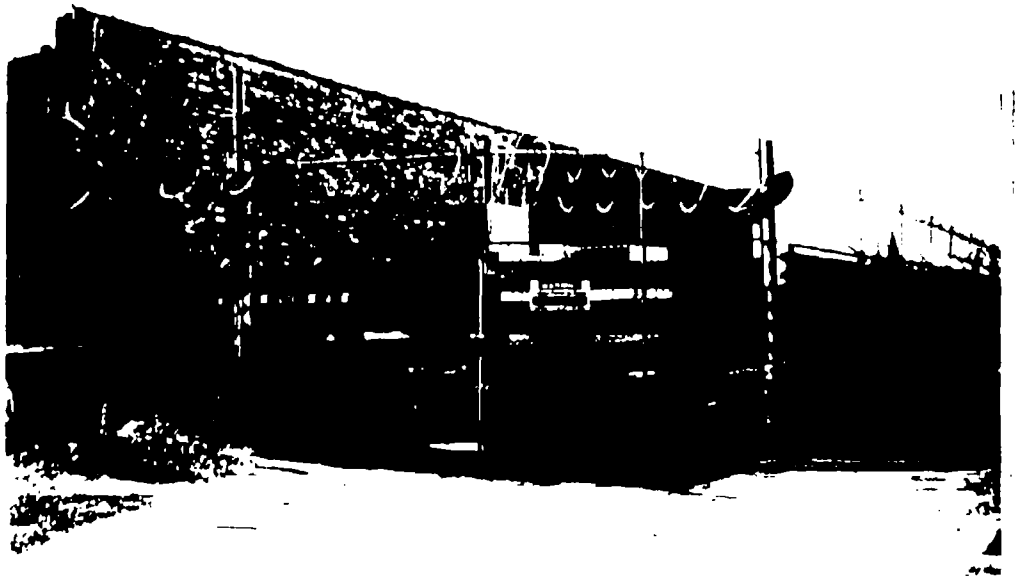
SITE NAME: **DAVID CHEMICAL**
TDD: **T05-9405-010**

DATE: **5/27/94**
TIME: **0830 HOURS**

PHOTOGRAPHER: **SALLY IMES**

DIRECTION: **EAST**

SUBJECT: **WEST SIDE OF DAVID CHEMICAL. FENCED IN AREA IS UTILIZED BY G.F. STRUCTURES CORP. TO STORE ALUMINUM BARRICADE MATERIAL.**



| | |
|---|---|
| SITE NAME: | **DAVID CHEMICAL** |
| TDD: | **T05-9405-010** |
| DATE: | **5/27/94** |
| TIME: | **0835 HOURS** |
| PHOTOGRAPHER: | **SALLY IMES** |
| DIRECTION: | **SOUTHEAST** |
| SUBJECT: | **NORTH SIDE OF FENCED AREA WHERE GATE TO ACCESS STORAGE AREA IS LOCATED.** |


| | |
|---|---|
| SITE NAME: | **DAVID CHEMICAL** |
| TDD: | **T05-9405-010** |
| DATE: | **5/27/94** |
| TIME: | **0835 HOURS** |
| PHOTOGRAPHER: | **SALLY IMES** |
| DIRECTION: | **SOUTHEAST** |
| SUBJECT: | **SIGN POSTED ON GATE BY G.F. STRUCTURE AS MEANS OF SECURITY.** |

TE NAME: **DAVID CHEMICAL**
D: **T05-9405-010**

TE: **5/27/94**
ME: **0835 HOURS**

OTOGRAPHER: **SALLY IMES**

RECTION: **WEST**

BJECT: **EASEMENT DIRECTLY ADJACENT TO THE NORTH SIDE OF DAVID CHEMICAL SITE. EMPTY DRUMS STORED BELONG TO DAVID CHEMICAL.**

SITE NAME: **DAVID CHEMICAL**
TDD: **T05-9405-010**

DATE: **5/27/94**
TIME: **1140 HOURS**

PHOTOGRAPHER: **SALLY IMES**

DIRECTION: **SOUTHWEST**

SUBJECT: **G.F. STRUCTURE CORP. LOCATED NORTH OF DAVID CHEMICAL. G.F. MANUFACTURES BARRICADES FOR THE CITY OF CHICAGO.**

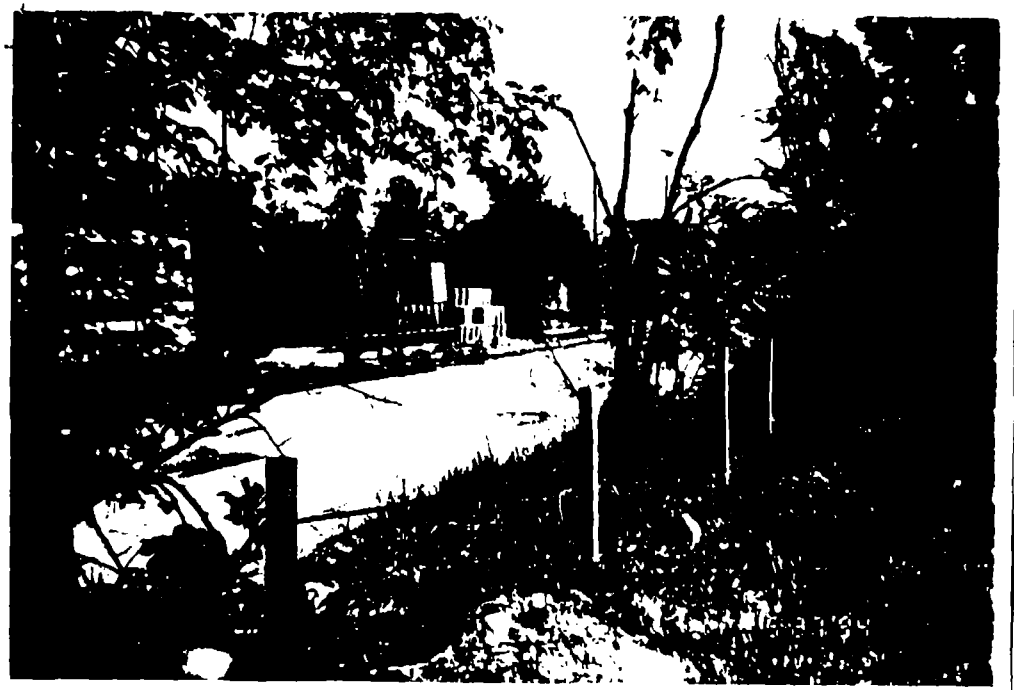
SITE NAME: DAVID CHEMICAL
TDD: T05-9405-010

DATE: 5/27/94
TIME: 1130 HOURS

PHOTOGRAPHER: PETE GURIA

DIRECTION: WEST

SUBJECT: RAIL YARD LOCATED SOUTH OF DAVID CHEMICAL ACROSS 5TH STREET.



SITE NAME: DAVID CHEMICAL
TDD: T05-9405-010

DATE: 5/27/94
TIME: 1135 HOURS

PHOTOGRAPHER: PETE GURIA

DIRECTION: EAST

SUBJECT: JOE'S DRUM; FACILITY IS LOCATED WEST OF SITE.

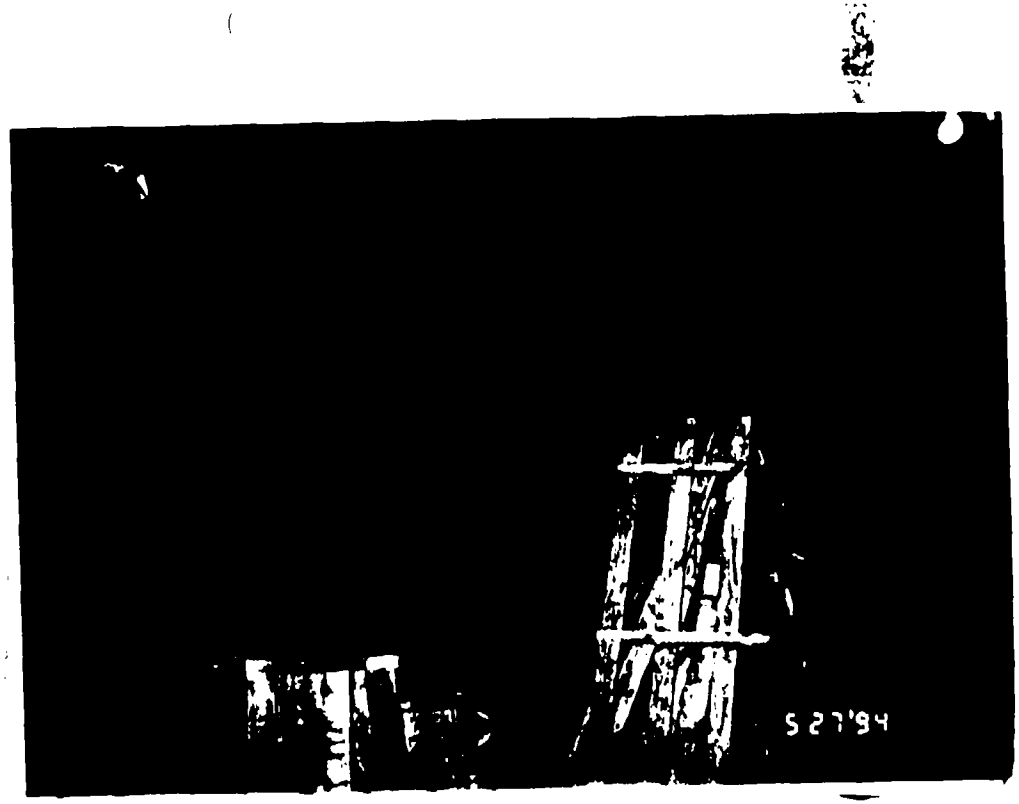
TE NAME: DAVID CHEMICAL
D: T05-9405-010

TE: 5/27/94
ME: 1135 HOURS

OTOGRAPHER: PETE GURIA

RECTION: NORTHWEST

BJECT: VIEW OF DAVID CHEMICAL SITE LOCATED AT 4650 5TH STREET, CHICAGO, ILLINOIS




SITE NAME: DAVID CHEMICAL
TDD: T05-9405-010

DATE: 5/27/94
TIME: 0900 HOURS

PHOTOGRAPHER: SALLY IMES

DIRECTION: SOUTHWEST

SUBJECT: SOUTHWEST CORNER INSIDE BUILDING. NOTE: SCATTERED DEBRIS.

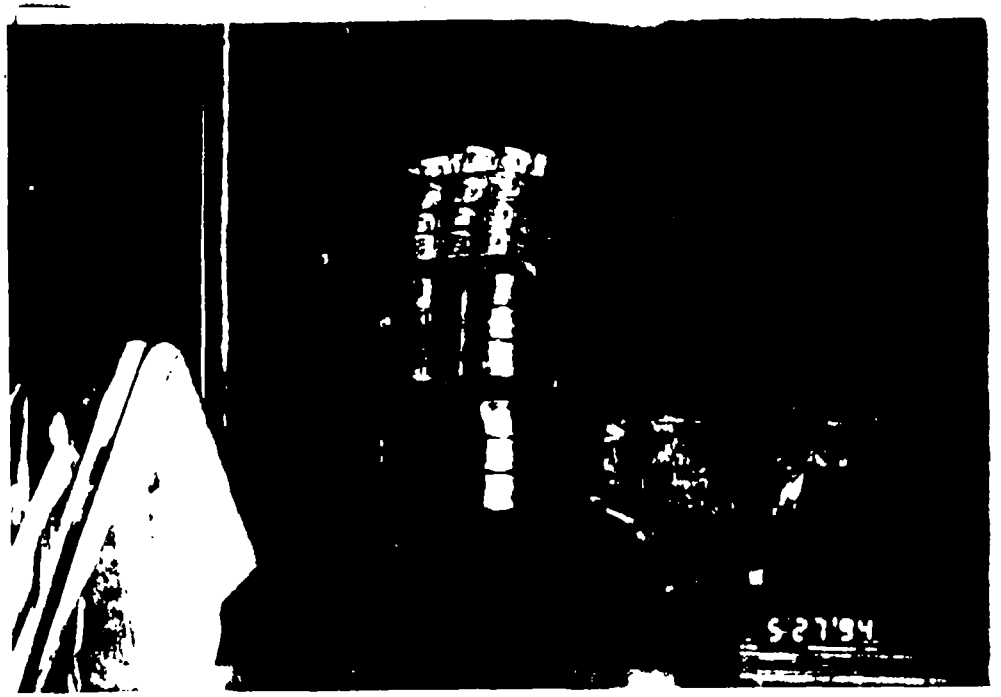

SITE NAME: DAVID CHEMICAL
TDD: T05-9405-010

DATE: 5/27/94
TIME: 0900 HOURS

PHOTOGRAPHER: SALLY IMES

DIRECTION: SOUTH

SUBJECT: 5-GALLON BUCKETS, CONTAINING CLEANING AGENT, ALONG SOUTH WALL.



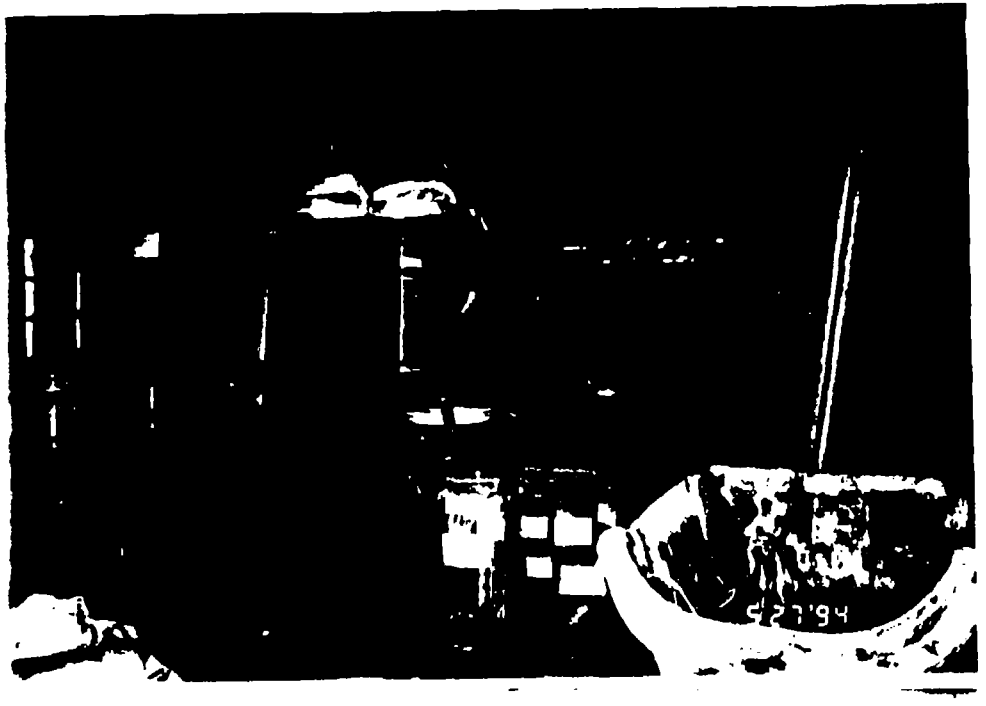

SITE NAME: DAVID CHEMICAL
TDD: T05-9405-010

DATE: 5/27/94
TIME: 0905 HOURS

PHOTOGRAPHER: SALLY IMES

DIRECTION: EAST

SUBJECT: SOUTHEAST CORNER INSIDE OF BUILDING. DRUMS WITH UNKNOWN CONTENTS STACKED THREE HIGH.





TE NAME: **DAVID CHEMICAL**
D: **T05-9405-010**

TE: **5/27/94**
ME: **0905 HOURS**

OTOGRAPHER: **SALLY IMES**

RECTION: **EAST**

BJECT: **DRUMS AND DEBRIS ALONG EAST WALL OF BUILDING.**

SITE NAME: **DAVID CHEMICAL**
TDD: **T05-9405-010**

DATE: **5/27/94**
TIME: **0905 HOURS**

PHOTOGRAPHER: **SALLY IMES**

DIRECTION: **NORTHEAST**

SUBJECT: **DRUMS, 5-GALLON BUCKETS, AND DEBRIS ALONG EAST WALL OF BUILDING. NOTE: SEVERAL BOXES OF EMPTY 1-GALLON BOTTLES UTILIZED TO PACKAGE PRODUCT.**

SITE NAME: DAVID CHEMICAL
TDD: T05-9405-010

DATE: 5/27/94
TIME: 0940 HOURS

PHOTOGRAPHER: SALLY IMES

DIRECTION: NORTHWEST

SUBJECT: BUCKET OF MATERIAL WHICH WAS REMOVED FROM THE FLOOR BY THE PRP. A SAMPLE WAS COLLECTED FROM THIS MATERIAL.

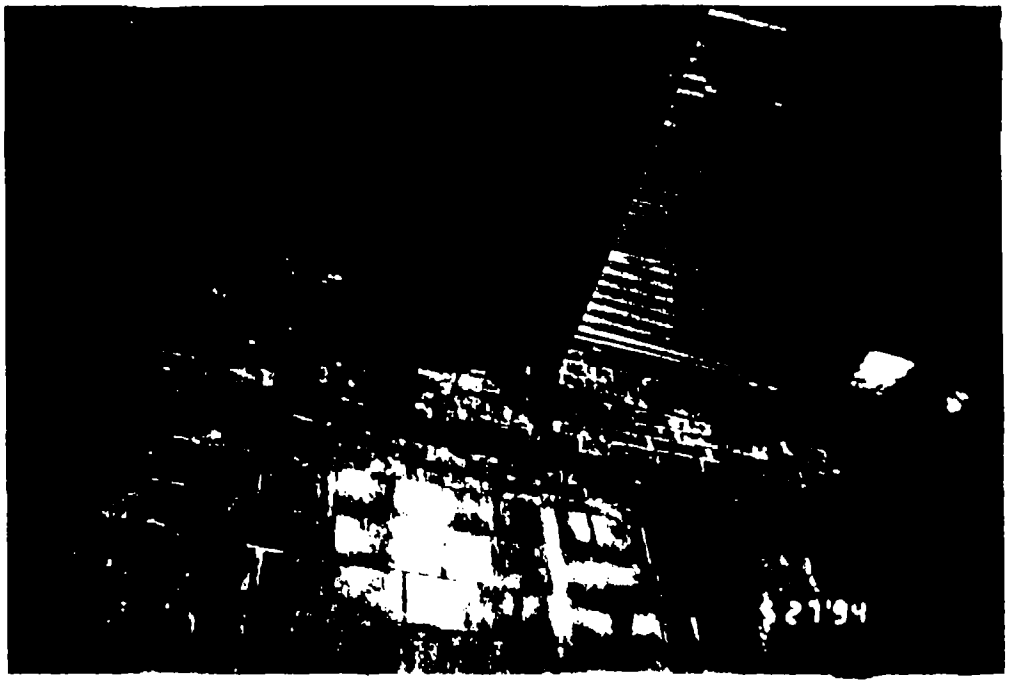

SITE NAME: DAVID CHEMICAL
TDD: T05-9405-010

DATE: 5/27/94
TIME: 1015 HOURS

PHOTOGRAPHER: MICHELLE JASTER

DIRECTION: NORTH

SUBJECT: LARGE HOLES IN ROOF OF BUILDING. NOTE: HOLE IS DIRECTLY OVER BUCKETS AND DRUMS.


E NAME: **DAVID CHEMICAL**
: **T05-9405-010**

E: **5/27/94**
E: **1015 HOURS**

TOGRAPHER: **MICHELLE JASTER**

ECTION: **NORTHWEST**

JECT: **DRUMS CONTAINING UNKNOWN MATERIAL DIRECTLY BENEATH HOLE IN ROOF.**

SITE NAME: **DAVID CHEMICAL**
TDD: **T05-9405-010**

DATE: **5/27/94**
TIME: **1020 HOURS**

PHOTOGRAPHER: **MICHELLE JASTER**

DIRECTION: **EAST**

SUBJECT: **ROOF OF BUILDING CONTAINS SEVERAL HOLES AND CEILING BEAMS APPEAR TO BE IN DETERIORATING CONDITION.**

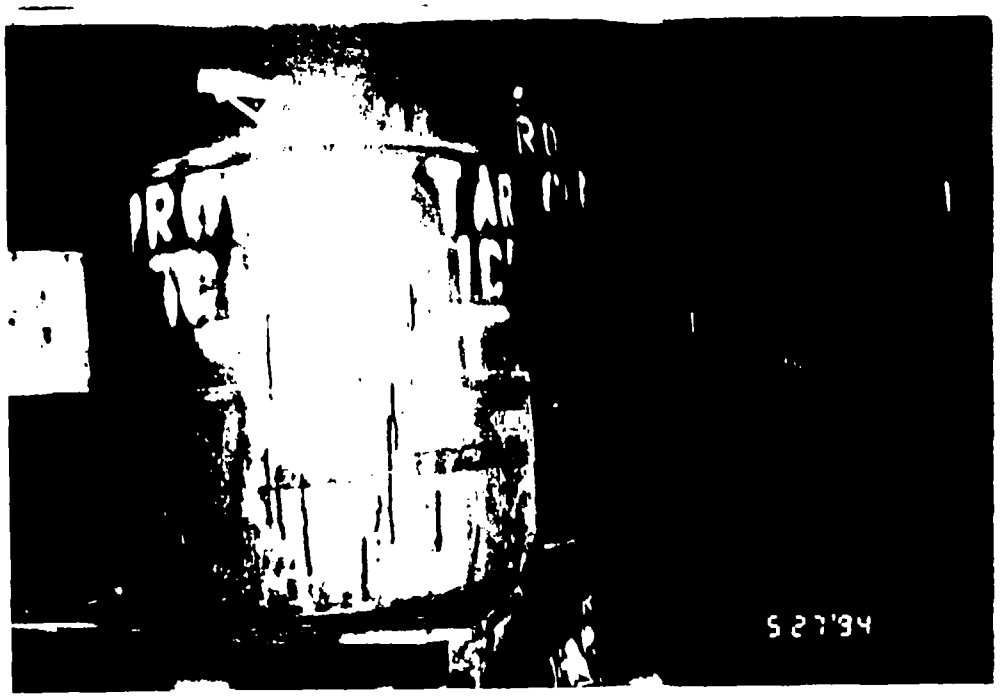
SITE NAME: DAVID CHEMICAL
TDD: T05-9405-010

DATE: 5/27/94
TIME: 1000 HOURS

PHOTOGRAPHER: SALLY IMES

DIRECTION: SOUTHWEST

SUBJECT: PALLETS OF CAUSTIC SODA STORED NEXT TO A 5-GALLON CAN OF ISOPROPYL ALCOHOL.




SITE NAME: DAVID CHEMICAL
TDD: T05-9405-010

DATE: 5/27/94
TIME: 1005 HOURS

PHOTOGRAPHER: SALLY IMES

DIRECTION: NORTH

SUBJECT: DAVID CHEMICAL UTILIZED PROPRIETARY CHROMIC ACID TO MANUFACTURE CLEANING AGENT. NOT DRUMS ARE STACKED 3 ROWS HIGH, A STORED NEAR CALCIUM HYPOCHLORITE

TE NAME: **DAVID CHEMICAL**
D: **T05-9405-010**

TE: **5/27/94**
ME: **1005 HOURS**

OTOGRAPHER: **SALLY IMES**

RECTION: **EAST**

BJECT: **GLYCONIC ACID STORED IN NORTHEAST CORNER OF BUILDING.**

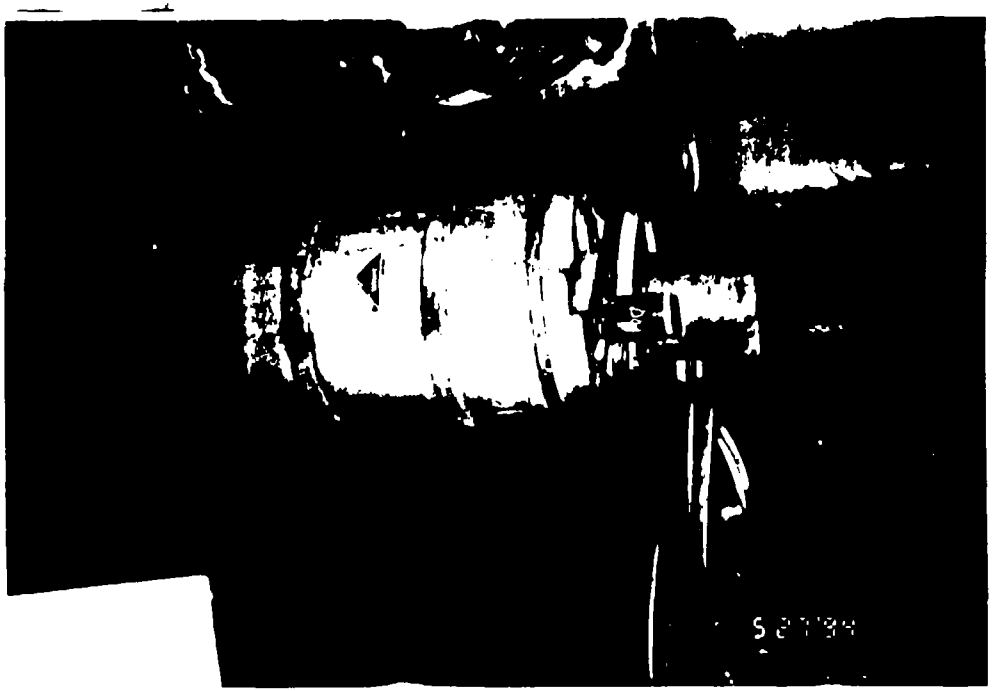
SITE NAME: **DAVID CHEMICAL**
TDD: **T05-9405-010**

DATE: **5/27/94**
TIME: **1007 HOURS**

PHOTOGRAPHER: **SALLY IMES**

DIRECTION: **EAST**

SUBJECT: **DRUMS CONTAINING FLAMMABLE LIQUIDS STORED ALONG EAST WALL.**



SITE NAME: DAVID CHEMICAL
TDD: T05-9405-010

DATE: 5/27/94
TIME: 1040 HOURS

PHOTOGRAPHER: MICHELLE JASTER

DIRECTION: NORTHEAST

SUBJECT: SAMPLE D001 COLLECTED FROM A DRUM SUSPECTED TO CONTAIN HYDROFLUORIC ACID. pH WAS < 1.0.

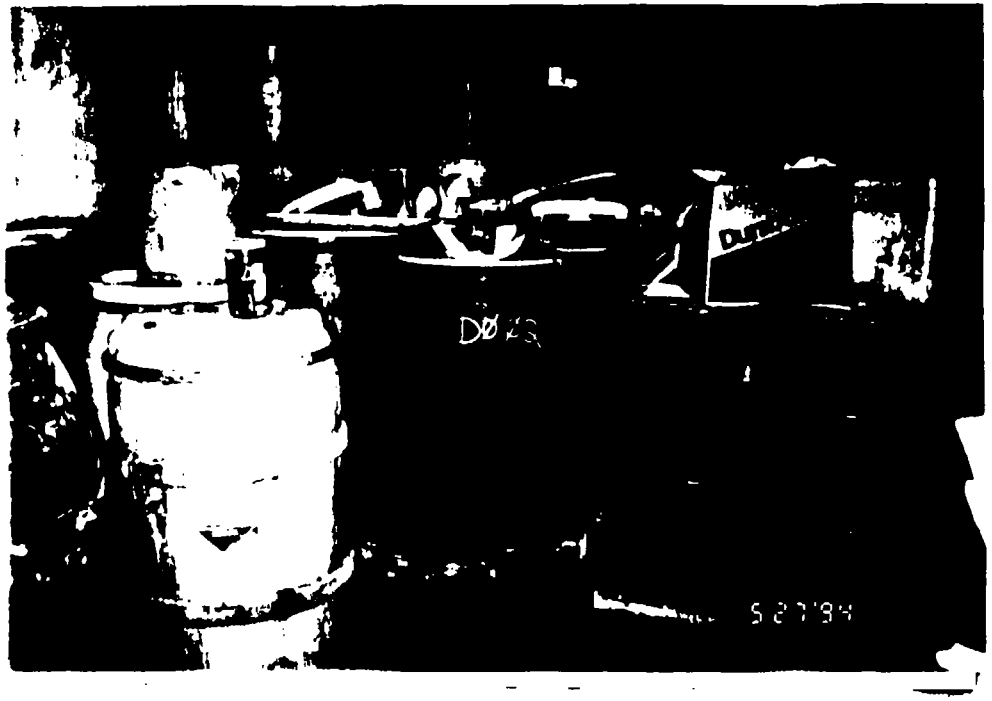

SITE NAME: DAVID CHEMICAL
TDD: T05-9405-010

DATE: 5/27/94
TIME: 1045 HOURS

PHOTOGRAPHER: MICHELLE JASTER

DIRECTION: NORTHEAST

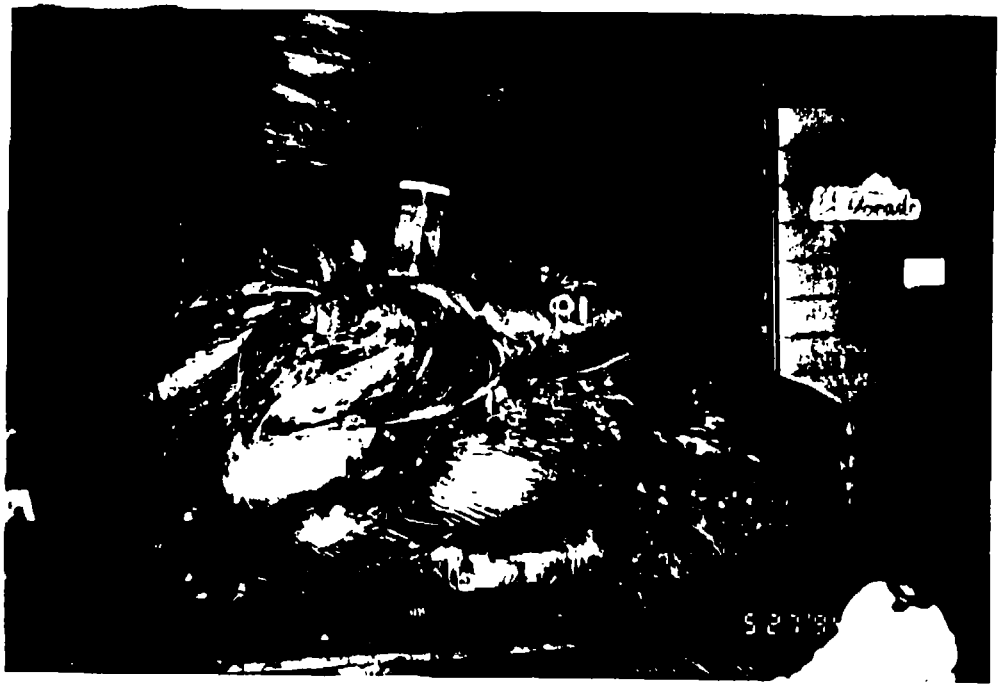
SUBJECT: SAMPLE D002 COLLECTED FROM MARKE OIL CLEANER. MICROTIP READINGS OBTAINED WERE APPROXIMATELY 600 PPM.





| | |
|---|---|
| TE NAME: | **DAVID CHEMICAL** |
| D: | **T05-9405-010** |
| TE: | **5/27/94** |
| ME: | **1045 HOURS** |
| OTOGRAPHER: | **MICHELLE JASTER** |
| RECTION: | **NORTHEAST** |
| BJECT: | **DRUMS D001 AND DOO2 LOCATED IN NORTHWEST SECTION OF BUILDING BENEATH HOLE IN ROOF.** |

| | |
|---|---|
| SITE NAME: | **DAVID CHEMICAL** |
| TDD: | **T05-9405-010** |
| DATE: | **5/27/94** |
| TIME: | **1050 HOURS** |
| PHOTOGRAPHER: | **MICHELLE JASTER** |
| DIRECTION: | **NORTHWEST** |
| SUBJECT: | **SAMPLE D003 COLLECTED FROM DRUM MARKED PROPRIETARY CHROMIC ACID.** |



| | |
|---|---|
| SITE NAME: | DAVID CHEMICAL |
| TDD: | T05-9405-010 |
| DATE: | 5/27/94 |
| TIME: | 1105 HOURS |
| PHOTOGRAPHER: | MICHELLE JASTER |
| DIRECTION: | NORTH |
| SUBJECT: | SAMPLE BG-01 COLLECTED FROM MATERIAL STORED IN AN UNMARKED BAG. |


| | |
|---|---|
| SITE NAME: | DAVID CHEMICAL |
| TDD: | T05-9405-010 |
| DATE: | 5/27/94 |
| TIME: | 1115 HOURS |
| PHOTOGRAPHER: | MICHELLE JASTER |
| DIRECTION: | WEST |
| SUBJECT: | SAMPLE BK-01 COLLECTED FROM 5-GALLON BUCKET. PRP STATED MATERIAL WAS REMOVED FROM THE FLOOR AFTER A SPILL. |

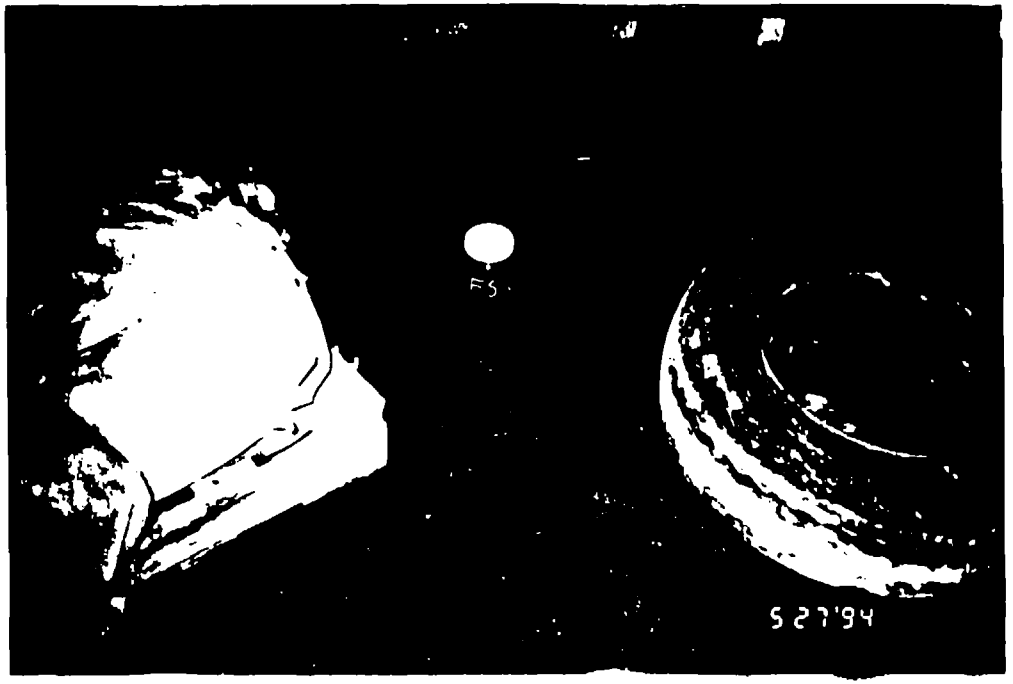
TE NAME: DAVID CHEMICAL
)D: T05-9405-010

.TE: 5/27/94
ME: 1120 HOURS

)OTOGRAPHER: MICHELLE JASTER

RECTION: EAST

'BJECT: SAMPLE FS-01 COLLECTED FROM FLOOR SWEEPINGS ALONG EAST WALL NEAR FLUOROBORIC AND GLACIAL ACETIC ACID DRUMS.




SITE NAME: DAVID CHEMICAL
TDD: T05-9405-010

DATE: 5/27/94
TIME: 1120 HOURS

PHOTOGRAPHER: MICHELLE JASTER

DIRECTION: EAST

SUBJECT: CLOSE-UP OF FLOOR WHERE FS-01 WAS COLLECTED.

# ATTACHMENT B

# DRUM AND SAMPLE LOGS

DRUM LOG FORM

DRUM NO. D001

# DAVID CHEMICAL SITE

DATE: 5/27/94 TIME: 1040

DRUM SIZE (GAL.): 5 30 (55) OTHER poly (yellow)

QUANTITY: EMPTY 1/8 1/4 1/3 1/2 (3/4) FULL

DRUM CONDITION: EXC. GOOD (FAIR) POOR

COMMENTS: _____

SAMPLE METHOD: (DRUM THIEF) TROWEL OTHER _____

CONTENTS: SOLID ____ IN. SEMI-SOLID ____ IN.

SLUDGE ____ IN. (LIQUID) ____ IN.

MARKINGS: corrosive sticker
marked hydrofluoric acid

COLOR: Clear

pH: _____

GRAIN SIZE: _____

D
R
U
M

ADDITIONAL COMMENTS:
NW corner of pad
under hole in roof

DRUM LOG FORM

DRUM NO. N 0001

# DAVID CHEMICAL SITE

DATE: 5/24/94 TIME: 1045

DRUM SIZE (GAL.): 5 30 (55) OTHER poly (blue)

QUANTITY: EMPTY 1/8 1/4 1/3 1/2 3/4 (FULL)

DRUM CONDITION: EXC. (GOOD) FAIR POOR

COMMENTS: _____

SAMPLE METHOD: (DRUM THIEF) TROWEL OTHER _____

CONTENTS: SOLID ____ IN. SEMI-SOLID ____ IN.

SLUDGE ____ IN. (LIQUID all) IN.

MARKINGS: oil cleaner

PRP says its mineral spirits

COLOR: gold liq

pH: _____

GRAIN SIZE: _____

D
R
U
M

ADDITIONAL COMMENTS: _____

NW section of bldg to E of dock under hole in roof

~600 ppm on Mi analyzer

DRUM LOG FORM

DRUM NO. D003

# DAVID CHEMICAL SITE

DATE: 5/27/94 TIME: 1050

DRUM SIZE (GAL.): 5 30 (55) OTHER poly (black)

QUANTITY: EMPTY 1/8 1/4 1/3 1/2 3/4 (FULL)

DRUM CONDITION: EXC. (GOOD) FAIR POOR

COMMENTS: _____

SAMPLE METHOD: (DRUM THIEF) TROWEL OTHER _____

CONTENTS: SOLID ____ IN. SEMI-SOLID ____ IN.

SLUDGE ____ IN. (LIQUID) full IN.

MARKINGS: proprietary chromic acid

COLOR: burnt orange

pH: ~1

GRAIN SIZE: _____

D
R
U
M

ADDITIONAL COMMENTS:

Near trail/NE portion of bldg

20 drums E of trailer

DRUM LOG FORM

DRUM NO. 99-1001

# DAVID CHEMICAL SITE

DATE: 5/27/94 TIME: 1115

DRUM SIZE (GAL.): 5 30 55 OTHER Plastic Bag ~20lb

QUANTITY: EMPTY 1/8 1/4 1/3 1/2 3/4 (FULL)

DRUM CONDITION: EXC. GOOD FAIR (POOR)

COMMENTS: Hole in bag

SAMPLE METHOD: DRUM THIEF TROWEL OTHER Spoon

CONTENTS: (SOLID) ____ IN. SEMI-SOLID ____ IN.

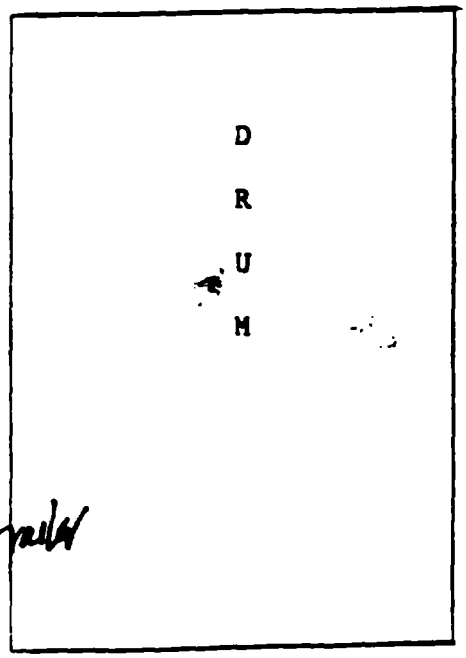
SLUDGE ____ IN. LIQUID ____ IN.

MARKINGS: no markings
PRP says caustic

COLOR: rust colored pellets

pH: _____

GRAIN SIZE: _____




ADDITIONAL COMMENTS: _____

Neutral portion of b/dg just W of trailer
on top of numerous 20lb bags
of blue pellets

DRUM LOG FORM

DRUM NO. BK-01

# DAVID CHEMICAL SITE

DATE: 5/27/94 TIME: 1115

DRUM SIZE (GAL.): (5) 30 55 OTHER gal steel bucket

QUANTITY: EMPTY 1/8 1/4 1/3 1/2 3/4 (FULL)

DRUM CONDITION: EXC. GOOD (FAIR) POOR

COMMENTS: _____

SAMPLE METHOD: DRUM THIEF TROWEL OTHER spoon

CONTENTS: (SOLID) ____ IN. SEMI-SOLID ____ IN.

SLUDGE ____ IN. LIQUID ____ IN.

MARKINGS: PRP says floor sweepings from around chromic acid drums. Spill cleaned w/ TSP

COLOR: yellow + white

pH: _____

GRAIN SIZE: _____

D

R

U

M

ADDITIONAL COMMENTS: NW corner of bldg just east of garage door

DRUM LOG FORM

DRUM NO. BS-01

# DAVID CHEMICAL SITE

DATE: 5/27/94 TIME: 1020

DRUM SIZE (GAL.): 5 30 55 OTHER N/A

QUANTITY: EMPTY 1/8 1/4 1/3 1/2 3/4 FULL

DRUM CONDITION: EXC. GOOD FAIR POOR

COMMENTS: _____

SAMPLE METHOD: DRUM THIEF TROWEL OTHER _____

CONTENTS: SOLID ____ IN. SEMI-SOLID ____ IN.

SLUDGE ____ IN. LIQUID ____ IN.

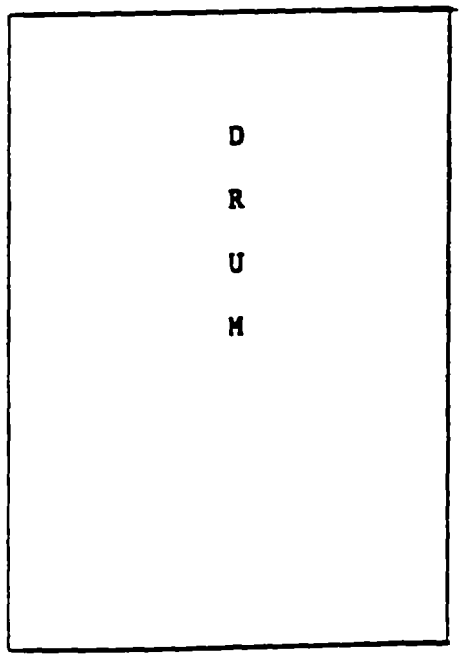
MARKINGS: _____

_____

COLOR: _____

pH: _____

GRAIN SIZE: _____




ADDITIONAL COMMENTS:

Floor sludge from along E wall

Brown, wet dirt

Near Glacial acid drums

Not Fluoboric acid drums

DRUM LOG FORM

DRUM NO. PR-01

# DAVID CHEMICAL SITE

DATE: 5/27/94 TIME: 1055

DRUM SIZE (GAL.): 5 30 55 OTHER 1 gallon

QUANTITY: EMPTY 1/8 1/4 1/3 1/2 3/4 (FULL)

DRUM CONDITION: EXC. GOOD FAIR POOR

COMMENTS: _____

SAMPLE METHOD: DRUM THIEF TROWEL OTHER _____

CONTENTS: SOLID ____ IN. SEMI-SOLID ____ IN.

SLUDGE ____ IN. LIQUID ✓ IN.

MARKINGS: _____

_____

COLOR: dk green

pH: _____

GRAIN SIZE: _____

D

R

U

M

ADDITIONAL COMMENTS: PRP product - dk green in color

_____

# ATTACHMENT C

# CHAIN OF CUSTODY FORMS

ENVIRONMENTAL PROTECTION AGENCY
Office of Enforcement

REGION 5
77 West Jackson Boulevard
Chicago, Illinois 60604

# CHAIN OF CUSTODY RECORD

| PROJ. NO. | PROJECT NAME | No. OF CONTAINERS | Activity Code: |
|---|---|---|---|
| ZT 2054 | TOS-9405-807 | | |

SAMPLERS: (Print Name and Sign)
Michelle Jaster — Michelle L. Jaster
Sally Innes — Sally J. Innes

| STA. NO. | DATE | TIME | COMP. | GRAB | STATION LOCATION | No. OF CONTAINERS | Analyze: DH | Total Metals - 8 RCRA | Total - Reactive Sulfide | Total - Reactive Cyanide | Flashpoint | TCLP Metals - 8 RCRA | TAG NUMBERS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| D001 | 5/27/94 | 1040 | | ✓ | Drum | 1-32oz | X | X | | | | | |
| D002 | | 1045 | | ✓ | Drum | 1-8oz | | | | | X | | HNu readings >600 ppm |
| D003 | | 1050 | | ✓ | Drum | 1-32oz | X | X | X | X | | | |
| PR-01 | | 1055 | | ✓ | PRP Product | 1-32oz | X | X | | | | | |
| BK-01 | | 1115 | | ✓ | Bucket - floor | 1-32oz | X | | | | | X | |
| BG-01 | | 1105 | | ✓ | Bagged contents | 1-32oz | X | | | | | X | |
| FS-01 | ⊥ | ~~1055~~ 1120 | | ✓ | Floor sludge | 1-32oz | X | | X | X | | X | |

Billing: Results to
M.J. Ripp
Ecology & Environment, Inc.
111 W Jackson Blvd
Chicago, IL 60604
Fax 312-663-1090
Phone 312-663-9415

QA Level II
7 calendar day turnaround-ve
14 calendar day hardcopy

| Relinquished by: (Signature) | Date / Time | Received by: (Signature) |
|---|---|---|
| Sally Innes | 5/27/94 1500 | Timothy Calloway |
| Relinquished by: (Signature) | Date / Time | Received by: (Signature) |
| | | |
| Relinquished by: (Signature) | Date / Time | Received for Laboratory by: (Signature) / Date / Time |
| Timothy Calloway | 5/31/94 | 5/31/94 1:0 |

Ship To: PICKED UP: IEA LABS
126 West Centre Ct.
Schaumburg, IL 60195
ATTN: Jim Dowse 708-705-0740

Airbill Number: N/A

Chain of Custody Seal Numbers:

Distribution: White - Accompanies Shipment; Pink - Coordinator Field Files; Yellow - Laboratory File

5 21512

ENVIRONMENTAL PROTECTION AGENCY
ce of Enforcement

REGION 5
77 We. ackson Boulevard
Chicago, Illinois 60604

# CHAIN OF CUSTODY RECORD

| PROJ. NO. | PROJECT NAME | Activity Code: |
|---|---|---|
| 2T 2054 | TOS-9405-807 | |

SAMPLERS: (Print Name and Sign)
Michelle Jaster — Michelle L. Jaster
Sally Innes — Sally J. Innes

| STA. NO. | DATE | TIME | COMP. | GRAB | STATION LOCATION | No. OF CONTAINERS | Analyte: Semi-Volatiles | Volatiles | F-listed Alcohols only | | | | TAG NUMBERS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| FS-01 | 5/27/94 | 1120 | | ✓ | floor sludge | 1-8oz | X | | | | | | |
| D002 | 1 | 1045 | | ✓ | Drum | 1-32oz | X | X | X | | | | |
| | | | | | | | | | | | | | QA Level II |
| | | | | | | | | | | | | | 7 calendar day verbal turnaround |
| | | | | | Billing + Results to: | | | | | | | | 14 calendar day hardcopy turnaround |
| | | | | | MJ Ripp | | | | | | | | |
| | | | | | Ecology + Environment, Inc. | | | | | | | | * Alcohol analysis to include |
| | | | | | 111 W Jackson Blvd. | | | | | | | | those on F-list only |
| | | | | | Chicago, IL 60604 | | | | | | | | |
| | | | | | Fax 312-663-1090 | | | | | | | | |
| | | | | | Phone 312-663-9415 | | | | | | | | |
| | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |

| Relinquished by: (Signature) | Date / Time | Received by: (Signature) |
|---|---|---|
| Sally J. Innes | 5/27/94 1500 | |
| Relinquished by: (Signature) | Date / Time | Received by: (Signature) |
| | | |
| Relinquished by: (Signature) | Date / Time | Received for Laboratory by: (Signature) / Date / Time |
| | | |

Ship To: NET Midwest
850 W. Bartlett Rd.
Bartlett, IL 60103-4400

ATTN: Moirai Holland 708-289-3100

Airbill Number 790
1254910904 SII

Chain of Custody Seal Numbers
179356, 179358

Distribution: White - Accompanies Shipment; Pink - Coordinator Field Files; Yellow - Laboratory File

# ATTACHMENT D

# COMMERCIAL LABORATORY ANALYTICAL RESULTS

ecology and environment, inc.
12251 UNIVERSAL, TAYLOR, MICHIGAN 48180, TEL. (313) 946-0900
International Specialists in the Environment

**M E M O R A N D U M**

DATE: June 23, 1994

TO: Sally Imes, Project Manager, E & E, Chicago, IL

FROM: Herbert B. Langer, TAT-Chemist, E & E, Detroit, MI

THRU: Sandra L. Basham, ATATL, E & E, Detroit, MI

SUBJ: **Organic Data Quality Assurance Review, David Chemical, Chicago, Cook County, IL**

REF: Analytical TDD: T05-9405-807 Project TDD: T05-9405-010
Analytical PAN: EIL0638AAA Project PAN: EIL0638SAA

The data quality assurance review for the two waste samples collected from the David Chemical site in Chicago, Illinois, has been completed. Analyses for Semi-Volatile Organic Compounds (SW846, method 8270) was performed by National Environmental Testing Laboratories, Bartlett, Illinois.

The samples were numbered FS-01 and DOO2 corresponding to laboratory identification numbers 262670 and 262671, respectively.

Data Qualifications

I Holding Time: Acceptable

The samples were collected May 27, 1994, and analyzed May 31, and June 3, 1994, within the recommended holding times for the method and matrices.

II GC/MS Tuning: Acceptable

Decafluorotriphenylphosphene tuning compound was analyzed on each day of analysis. Ion abundance criteria were met for the instrument used.

III Initial and Continuing Calibration Verification: Acceptable

Initial calibration was performed May 22, 1994. All average response factors were greater than zero and percent relative

standard deviations between concentration response factors were less than thirty. Continuing calibration was performed each day of analysis. All relative response factors were greater than 0.05 and percent difference between average and relative response factors were less than twenty-five for detected compounds as required.

IV Method Blank: Acceptable

A method blank was analyzed at the beginning of each sample run. None of the target compounds were detected in the blanks above the instrument detection limit.

V Optional Quality Control Analyses:

A. Matrix Spike (MS) Analysis: Acceptable

A MS was prepared by the laboratory using the method blanks. Percent recoveries of the spike compounds were within the laboratory's quality control guidelines.

B. Surrogate Recovery: Acceptable

A total of six surrogates were added to each sample. Percent recoveries of the surrogate compounds were within the laboratory's quality control guidelines.

VI Compound Identification: Acceptable

Retention times for the identified compounds were within 0.06 units of the daily standards. All compounds present in the sample were present in the daily standards.

VII Compound Quantitation and Reported Detection Limits: Acceptable

Compound quantitation and reported detection limits correctly reflect dilution of the samples and the percent solids.

VIII Overall Assessment of Data for Use:

The overall usefulness of the data is based on the criteria outlined in OSWER Directive 9360.4-01 (April 1990), Data Validation Procedures, Section 4.0, BNAs by GC/MS Analysis.

Based upon the information provided, the data are acceptable for use.

ecology and environment, inc.
12251 UNIVERSAL, TAYLOR, MICHIGAN 48180, TEL. (313) 946-0900
International Specialists in the Environment

**M E M O R A N D U M**

DATE: June 23, 1994

TO: Sally Imes, Project Manager, E & E, Chicago, IL

FROM: Herbert B. Langer, TAT-Chemist, E & E, Detroit, MI

THRU: Sandra L. Basham, ATATL, E & E, Detroit, MI

SUBJ: **Organic Data Quality Assurance Review, David Chemical, Chicago, Cook County, IL**

REF: Analytical TDD: T05-9405-807 Project TDD: T05-9405-010
Analytical PAN: EIL0638AAA Project PAN: EIL0638SAA

The data quality assurance review for the waste sample collected from the David Chemical site in Chicago, Illinois, has been completed. Analysis for Volatile Organic Compounds (SW846, method 8240) and Alcohols (method 8015) was performed by National Environmental Testing Laboratories, Bartlett, Illinois, and Dallas, Texas.

The sample was numbered D002 corresponding to laboratory identification number 262671.

Data Qualifications

I Holding Time: Acceptable

The sample was collected May 27, 1994. The sample was analyzed for volatiles June 4, 1994, and alcohols June 2, 1994, within the recommended holding times for the methods and matrices.

II GC/MS Tuning: Acceptable

Bromofluorobenzene tuning compound was analyzed on the day of volatile compound analysis. Ion abundance criteria were met for the instrument used. Alcohol analysis uses only GC instrumentation so GC/MS tuning was not required.

III Initial and Continuing Calibration Verification: Qualified

Initial GC/MS calibration was performed April 21, 1994. All average response factors were greater than zero and percent relative standard deviation between concentration response factors were less than thirty. Continuing calibration was performed on the day of analysis. All relative response factors were greater than 0.05 except acrolein. The non-detect result for this sample has been rejected. Percent difference between average and relative response factors were less than twenty-five as required.

Initial GC calibration was performed using all the target alcohols May 31, 1994. Continuing calibration was performed June 2, 1994. Peak response correlation for the standard concentrations was acceptable.

IV Method Blank: Acceptable

A method blank was analyzed with each analytical run. None of the target compounds were detected in the blank above the instrument detection limit.

V Optional Quality Control Analyses: Acceptable

A. Matrix Spike/Matrix Spike Duplicate (MS/MSD): Acceptable

Volatile MS and MSDs were prepared and analyzed along with the sample run. Percent recoveries and relative percent difference between MS and MSD results were within the laboratory's quality control guidelines.

B. Surrogate Recovery: No Action

Three surrogate compounds were added to the sample analyzed for volatile compounds. One surrogate compound recovery was outside the laboratory's quality control guidelines. Since this was an optional analysis no action was taken.

VI Compound Identification: Acceptable

All response times for the detected volatile and alcohol compounds were within 0.06 units of the daily standard except methanol. This is due to the response time range where methanol is detected and the result is considered acceptable as reported.

VII Compound Quantitation and Reported Detection Limits: Acceptable

Compound quantitation and the reported detection limits correctly reflect sample dilutions.

VIII Overall Assessment of Data for Use:

The overall usefulness of the data is based on the criteria outlined in OSWER Directive 9360.4-01 (April 1990), Data Validation Procedures, Section 5.0, VOAs by GC/MS Analysis.

Based upon the information provided, the data are acceptable for use with the above stated data qualifications.

Data Qualifiers and Definitions

R - The sample results are rejected (analyte may or may not be present) due to gross deficiencies in quality control criteria. Resampling and/or reanalysis is necessary for verification.

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# M E M O R A N D U M

DATE: June 29, 1994

TO: Sally Imes, Project Manager, E & E, Chicago, IL

FROM: Herbert B. Langer, TAT-Chemist, E & E, Detroit, MI

THRU: Sandra L. Basham, ATATL, E & E, Detroit, MI

SUBJ: **Flash Point and pH Data Quality Assurance Review, David Chemical, Chicago, Cook County, IL**

REF: Analytical TDD: T05-9405-807 Project TDD: T05-9405-010
Analytical PAN: EIL0638AAA Project PAN: EIL0638SAA

The data quality assurance review for the seven waste samples collected from the David Chemical site in Chicago, Illinois, has been completed. Analysis for pH (SW846, method 9045) and flash point (method 1010) was performed by IEA Laboratories, Schaumburg, Illinois.

The samples were numbered D001, D002, D003, BK-01, BG-01, PR-1, and FS-01, corresponding to laboratory identification 940964-001 through 940964-007.

Data Qualifications

I Holding Time: Acceptable

The samples were collected May 27, 1994. They were analyzed between May 31 and June 6, 1994. The sample was re-analyzed June 23, 1994, for flash point. The OSWER Directive 9360.4-01 does not include criteria regarding holding times for these methods.

II Calibration:

The lab used standard buffers with pH of 4.0, 7.0, and 10.0 to calibrate the instrument. A check sample was used to test the flash point equipment. The check sample flashed at the correct temperature.

III Flash Point

For a material to be considered ignitable under the Resource Conservation and Recovery Act (RCRA) the flash point must be determined using a "closed cup" analysis. The first sample analysis was performed using the "open cup" method. The sample was re-analyzed using the proper method.

VI Overall Assessment of Data for Use:

There are no criteria specified in the U.S. EPA OSWER Directive 9360.4-01 for the evaluation of pH and flash point analysis. Based on the calibration and review of the analytical method, the data is considered acceptable for use as reported.

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# M E M O R A N D U M

DATE: June 23, 1994

TO: Sally Imes, Project Manager, E & E, Chicago, IL

FROM: Herbert B. Langer, TAT-Chemist, E & E, Detroit, MI

THRU: Sandra L. Basham, ATATL, E & E, Detroit, MI

SUBJ: **Inorganic Data Quality Assurance Review, David Chemical, Chicago, Cook County, IL**

REF: Analytical TDD: T05-9405-807 Project TDD: T05-9405-010
Analytical PAN: EIL0638AAA Project PAN: EIL0638SAA

The data quality assurance review for the seven waste samples collected from the David Chemical site in Chicago, Illinois has been completed. Analyses for total and Toxicity Characteristic Leaching Procedure metals (SW846, method 6010) listed in the Resource Conservation and Recovery Act, total and reactive cyanide and sulfide (methods 9030, 7.3.3.2, 9010, and 7.3.4.1), and mercury (method 7470) were performed by IEA Laboratories, Schaumburg, Illinois.

The samples were numbered D001, D002, D003, BK-01, BG-01, PR-1, and FS-01, corresponding to laboratory identification 940964-001 through 940964-007.

## Data Qualifications

I Sample Holding Time: Acceptable

The samples were collected May 27, 1994. They were analyzed between June 2 and 8, 1994. All samples were analyzed within the correct holding times for the methods and matrices.

II Initial and Continuing Calibration Verification: Acceptable

Initial and continuing calibration standards were run for each analysis and analytical run. Recoveries of the target

compounds from the standards were within the recommended limits.

III Blanks: Acceptable

Blanks were analyzed with each analytical run. None of the target analytes were detected in the blanks above the instrument detection limits.

IV Interference Check Sample (ICS) Analysis: Acceptable

An ICS was run every eight hours. All ICS results were within the recommended control limits.

V Matrix Spike/Matrix Spike Duplicate (MS/MSD): Acceptable

MS and MSDs were prepared and analyzed with each sample run. Percent recoveries and percent differences between MS and MSD results were within the laboratory's quality control guidelines.

VI Overall Assessment of Date for Use

The overall usefulness of the data is based on the criteria outlined in OSWER Directive 9360.4-01 (April 1990), Data Validation Procedures, Section 3.0, Metallic Inorganic Parameters.

Based upon the information provided, the data are acceptable for use.

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Ms. Mary Ripp
ECOLOGY & ENVIRONMENT, INC
111 West Jackson Blvd.
Chicago, IL 60604

06/09/1994

NET Job Number: 94.03926

Enclosed is the Quality Control Data and Analytical Results for the following samples submitted to NET, Inc. Bartlett Division for analysis:

Project Description: 2T 2054; T05-9405-807

| Sample Number | Sample Description | Date Taken | Date Received |
|---|---|---|---|
| 262670 | FS-01; Grab | 05/27/1994 | 05/31/1994 |
| 262671 | D002; Grab | 05/27/1994 | 05/31/1994 |

Sample analysis in support of the project referenced above has been completed and results are presented on the following pages. These results apply only to the samples analyzed. Reproduction of this report only in whole is permitted. Please refer to the enclosed "Key to Abbreviations" for definition of terms. Should you have questions regarding procedures or results, please do not hesitate to call. NET has been pleased to provide these analytical services for you.

This Quality Control report is generated on a batch basis. All information contained in this report is for the analytical batch(es) in which your sample(s) were analyzed.

Approved by:

Jean-Pierre C. Rouanet
Operations Manager

OCEAN GROUP

NATIONAL ENVIRONMENTAL TESTING, INC.

Bartlett Division
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# ANALYTICAL REPORT

Ms. Mary Ripp
ECOLOGY & ENVIRONMENT, INC
111 West Jackson Blvd.
Chicago, IL 60604

06/09/1994

Sample No. : 262670

NET Job No.: 94.03926

Sample Description: FS-01; Grab
2T 2054; T05-9405-807

Date Taken: 05/27/1994
Time Taken: 11:20
IEPA Cert. No. 100221

Date Received: 05/31/1994
Time Received: 10:30
WDNR Cert. No. 999447130

| Parameter | Results | Units | Date of Analysis | Method PQL | Analyst | Batch No. Prep/Run | Analytical Method |
|---|---|---|---|---|---|---|---|
| PREP, BN Nonaqueous | extracted | | 05/31/1994 | | las | 180 | 3500 (1) |
| PREP, Acid Ext. Nonaqueous | extracted | | 05/31/1994 | | las | 180 | 3500 (1) |
| ACID CMPDS - 8270 NONAQUEOUS | | | | | | | |
| 4-Chloro-3-methylphenol | <320 | ug/Kg | 06/03/1994 | 330 | rla | 180 425 | 8270 (1) |
| 2-Chlorophenol | <320 | ug/Kg | 06/03/1994 | 330 | rla | 180 425 | 8270 (1) |
| 2,4-Dichlorophenol | <320 | ug/Kg | 06/03/1994 | 330 | rla | 180 425 | 8270 (1) |
| 2,4-Dimethylphenol | <320 | ug/Kg | 06/03/1994 | 330 | rla | 180 425 | 8270 (1) |
| 2,4-Dinitrophenol | <1,600 | ug/Kg | 06/03/1994 | 1,650 | rla | 180 425 | 8270 (1) |
| 2-Methyl-4,6-dinitrophenol | <1,600 | ug/Kg | 06/03/1994 | 1,650 | rla | 180 425 | 8270 (1) |
| 2-Nitrophenol | <320 | ug/Kg | 06/03/1994 | 330 | rla | 180 425 | 8270 (1) |
| 4-Nitrophenol | <1,600 | ug/Kg | 06/03/1994 | 1,650 | rla | 180 425 | 8270 (1) |
| Pentachlorophenol | <1,600 | ug/Kg | 06/03/1994 | 1,650 | rla | 180 425 | 8270 (1) |
| Phenol | <320 | ug/Kg | 06/03/1994 | 330 | rla | 180 425 | 8270 (1) |
| 2,4,6-Trichlorophenol | <320 | ug/Kg | 06/03/1994 | 330 | rla | 180 425 | 8270 (1) |
| BASE/NEUTRALS-8270 NONAQUEOUS | | | | | | | |
| Acenaphthene | 360 | ug/Kg | 06/03/1994 | 330 | rla | 180 425 | 8270 (1) |
| Acenaphthylene | <320 | ug/Kg | 06/03/1994 | 330 | rla | 180 425 | 8270 (1) |
| Anthracene | 810 | ug/Kg | 06/03/1994 | 330 | rla | 180 425 | 8270 (1) |
| Benzidine | <1,600 | ug/Kg | 06/03/1994 | 1,650 | rla | 180 425 | 8270 (1) |
| Benzo(a)anthracene | 2,000 | ug/Kg | 06/03/1994 | 330 | rla | 180 425 | 8270 (1) |
| Benzo(b)fluoranthene | 1,900 | ug/Kg | 06/03/1994 | 330 | rla | 180 425 | 8270 (1) |
| Benzo(k)fluoranthene | 1,400 | ug/Kg | 06/03/1994 | 330 | rla | 180 425 | 8270 (1) |
| Benzo(g,h,i)perylene | 1,100 | ug/Kg | 06/03/1994 | 330 | rla | 180 425 | 8270 (1) |
| Benzo(a)pyrene | 1,700 | ug/Kg | 06/03/1994 | 330 | rla | 180 425 | 8270 (1) |
| Benzyl butyl phthalate | 400 | ug/Kg | 06/03/1994 | 330 | rla | 180 425 | 8270 (1) |
| Bis(2-chloroethoxy)methane | <320 | ug/Kg | 06/03/1994 | 330 | rla | 180 425 | 8270 (1) |
| Bis(2-chloroethyl)ether | <320 | ug/Kg | 06/03/1994 | 330 | rla | 180 425 | 8270 (1) |
| Bis(2-chloroisopropyl)ether | <320 | ug/Kg | 06/03/1994 | 330 | rla | 180 425 | 8270 (1) |

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# ANALYTICAL REPORT

Ms. Mary Ripp
ECOLOGY & ENVIRONMENT, INC
111 West Jackson Blvd.
Chicago, IL 60604

06/09/1994

Sample No. : 262670

NET Job No.: 94.03926

Sample Description: FS-01; Grab
2T 2054; T05-9405-807

Date Taken: 05/27/1994
Time Taken: 11:20
IEPA Cert. No. 100221

Date Received: 05/31/1994
Time Received: 10:30
WDNR Cert. No. 999447130

| Parameter | Results | Units | Date of Analysis | Method PQL | Analyst | Batch No. Prep/Run | Analytical Method |
|---|---|---|---|---|---|---|---|
| Bis(2-ethylhexyl)phthalate | 3,040 | ug/Kg | 06/03/1994 | 330 | ria | 180 425 | 8270 (1) |
| 4-Bromophenyl phenyl ether | <320 | ug/Kg | 06/03/1994 | 330 | ria | 180 425 | 8270 (1) |
| 2-Chloronaphthalene | <320 | ug/Kg | 06/03/1994 | 330 | ria | 180 425 | 8270 (1) |
| 4-Chlorophenyl phenyl ether | <320 | ug/Kg | 06/03/1994 | 330 | ria | 180 425 | 8270 (1) |
| Chrysene | 2,200 | ug/Kg | 06/03/1994 | 330 | ria | 180 425 | 8270 (1) |
| Dibenzo(a,h)anthracene | 530 | ug/Kg | 06/03/1994 | 330 | ria | 180 425 | 8270 (1) |
| Di-n-butyl phthalate | 740 | ug/Kg | 06/03/1994 | 330 | ria | 180 425 | 8270 (1) |
| 1,2-Dichlorobenzene | <320 | ug/Kg | 06/03/1994 | 330 | ria | 180 425 | 8270 (1) |
| 1,3-Dichlorobenzene | <320 | ug/Kg | 06/03/1994 | 330 | ria | 180 425 | 8270 (1) |
| 1,4-Dichlorobenzene | <320 | ug/Kg | 06/03/1994 | 330 | ria | 180 425 | 8270 (1) |
| 3,3'-Dichlorobenzidine | <640 | ug/Kg | 06/03/1994 | 660 | ria | 180 425 | 8270 (1) |
| Diethyl phthalate | <320 | ug/Kg | 06/03/1994 | 330 | ria | 180 425 | 8270 (1) |
| Dimethyl phthalate | <320 | ug/Kg | 06/03/1994 | 330 | ria | 180 425 | 8270 (1) |
| 2,4-Dinitrotoluene | <320 | ug/Kg | 06/03/1994 | 330 | ria | 180 425 | 8270 (1) |
| 2,6-Dinitrotoluene | <320 | ug/Kg | 06/03/1994 | 330 | ria | 180 425 | 8270 (1) |
| Di-n-octyl phthalate | <320 | ug/Kg | 06/03/1994 | 330 | ria | 180 425 | 8270 (1) |
| Fluoranthene | 4,900 | ug/Kg | 06/03/1994 | 330 | ria | 180 425 | 8270 (1) |
| Fluorene | 420 | ug/Kg | 06/03/1994 | 330 | ria | 180 425 | 8270 (1) |
| Hexachlorobenzene | <320 | ug/Kg | 06/03/1994 | 330 | ria | 180 425 | 8270 (1) |
| Hexachlorobutadiene | <320 | ug/Kg | 06/03/1994 | 330 | ria | 180 425 | 8270 (1) |
| Hexachlorocyclopentadiene | <320 | ug/Kg | 06/03/1994 | 330 | ria | 180 425 | 8270 (1) |
| Hexachloroethane | <320 | ug/Kg | 06/03/1994 | 330 | ria | 180 425 | 8270 (1) |
| Indeno(1,2,3-cd)pyrene | 1,100 | ug/Kg | 06/03/1994 | 330 | ria | 180 425 | 8270 (1) |
| Isophorone | <320 | ug/Kg | 06/03/1994 | 330 | ria | 180 425 | 8270 (1) |
| Naphthalene | <320 | ug/Kg | 06/03/1994 | 330 | ria | 180 425 | 8270 (1) |
| Nitrobenzene | <320 | ug/Kg | 06/03/1994 | 330 | ria | 180 425 | 8270 (1) |
| N-Nitrosodimethylamine | <320 | ug/Kg | 06/03/1994 | 330 | ria | 180 425 | 8270 (1) |
| N-Nitrosodi-n-propylamine | <320 | ug/Kg | 06/03/1994 | 330 | ria | 180 425 | 8270 (1) |
| N-Nitrosodiphenylamine | <320 | ug/Kg | 06/03/1994 | 330 | ria | 180 425 | 8270 (1) |
| Phenanthrene | 2,270 | ug/Kg | 06/03/1994 | 330 | ria | 180 425 | 8270 (1) |

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# ANALYTICAL REPORT

Ms. Mary Ripp
ECOLOGY & ENVIRONMENT, INC
111 West Jackson Blvd.
Chicago, IL 60604

06/09/1994

Sample No. : 262670

NET Job No.: 94.03926

Sample Description: FS-01; Grab
2T 2054; T05-9405-807

Date Taken: 05/27/1994
Time Taken: 11:20
IEPA Cert. No. 100221

Date Received: 05/31/1994
Time Received: 10:30
WDNR Cert. No. 999447130

| Parameter | Results | Units | Date of Analysis | Method PQL | Analyst | Batch No. Prep/Run | Analytical Method |
|---|---|---|---|---|---|---|---|
| Pyrene | 3,600 | ug/Kg | 06/03/1994 | 330 | rla | 180 425 | 8270 (1) |
| 1,2,4-Trichlorobenzene | <320 | ug/Kg | 06/03/1994 | 330 | rla | 180 425 | 8270 (1) |
| Surr: Phenol-d6 | 77 | % | 06/03/1994 | 10-94 | rla | 180 425 | 8270 (1) |
| Surr: 2-Fluorophenol | 63 | % | 06/03/1994 | 21-100 | rla | 180 425 | 8270 (1) |
| Surr: Nitrobenzene-d5 | 81 | % | 06/03/1994 | 35-114 | rla | 180 425 | 8270 (1) |
| Surr: 2-Fluorobiphenyl | 76 | % | 06/03/1994 | 43-116 | rla | 180 425 | 8270 (1) |
| Surr: Terphenyl-d14 | 89 | % | 06/03/1994 | 33-141 | rla | 180 425 | 8270 (1) |
| Surr: 2,4,6-Tribromophenol | 117 | % | 06/03/1994 | 10-123 | rla | 180 425 | 8270 (1) |

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# ANALYTICAL REPORT

Ms. Mary Ripp
ECOLOGY & ENVIRONMENT, INC
111 West Jackson Blvd.
Chicago, IL 60604

06/09/1994

Sample No. : 262671

NET Job No.: 94.03926

Sample Description: D002; Grab
2T 2054; T05-9405-807

Date Taken: 05/27/1994
Time Taken: 10:45
IEPA Cert. No. 100221

Date Received: 05/31/1994
Time Received: 10:30
WDNR Cert. No. 999447130

| Parameter | Results | Units | Date of Analysis | Method PQL | Analyst | Batch No. Prep/Run | Analytical Method |
|---|---|---|---|---|---|---|---|
| PREP, BN Nonaqueous | extracted | | 06/03/1994 | | las | 181 | 3500 (1) |
| PREP, Acid Ext. Nonaqueous | extracted | | 06/03/1994 | | las | 181 | 3500 (1) |
| ACID CMPDS - 8270 NONAQUEOUS | | | | | | | |
| 4-Chloro-3-methylphenol | <100 | mg/Kg | 06/03/1994 | 330 | rla | 181 425 | 8270 (1) |
| 2-Chlorophenol | <100 | mg/Kg | 06/03/1994 | 330 | rla | 181 425 | 8270 (1) |
| 2,4-Dichlorophenol | <100 | mg/Kg | 06/03/1994 | 330 | rla | 181 425 | 8270 (1) |
| 2,4-Dimethylphenol | <100 | mg/Kg | 06/03/1994 | 330 | rla | 181 425 | 8270 (1) |
| 2,4-Dinitrophenol | <500 | mg/Kg | 06/03/1994 | 1,650 | rla | 181 425 | 8270 (1) |
| 2-Methyl-4,6-dinitrophenol | <500 | mg/Kg | 06/03/1994 | 1,650 | rla | 181 425 | 8270 (1) |
| 2-Nitrophenol | <100 | mg/Kg | 06/03/1994 | 330 | rla | 181 425 | 8270 (1) |
| 4-Nitrophenol | <500 | mg/Kg | 06/03/1994 | 1,650 | rla | 181 425 | 8270 (1) |
| Pentachlorophenol | <500 | mg/Kg | 06/03/1994 | 1,650 | rla | 181 425 | 8270 (1) |
| Phenol | 160 | mg/Kg | 06/03/1994 | 330 | rla | 181 425 | 8270 (1) |
| 2,4,6-Trichlorophenol | <100 | mg/Kg | 06/03/1994 | 330 | rla | 181 425 | 8270 (1) |
| BASE/NEUTRALS-8270 NONAQUEOUS | | | | | | | |
| Acenaphthene | <100 | mg/Kg | 06/03/1994 | 330 | rla | 181 425 | 8270 (1) |
| Acenaphthylene | <100 | mg/Kg | 06/03/1994 | 330 | rla | 181 425 | 8270 (1) |
| Anthracene | <100 | mg/Kg | 06/03/1994 | 330 | rla | 181 425 | 8270 (1) |
| Benzidine | <500 | mg/Kg | 06/03/1994 | 1,650 | rla | 181 425 | 8270 (1) |
| Benzo(a)anthracene | <100 | mg/Kg | 06/03/1994 | 330 | rla | 181 425 | 8270 (1) |
| Benzo(b)fluoranthene | <100 | mg/Kg | 06/03/1994 | 330 | rla | 181 425 | 8270 (1) |
| Benzo(k)fluoranthene | <100 | mg/Kg | 06/03/1994 | 330 | rla | 181 425 | 8270 (1) |
| Benzo(g,h,i)perylene | <100 | mg/Kg | 06/03/1994 | 330 | rla | 181 425 | 8270 (1) |
| Benzo(a)pyrene | <100 | mg/Kg | 06/03/1994 | 330 | rla | 181 425 | 8270 (1) |
| Benzyl butyl phthalate | <100 | mg/Kg | 06/03/1994 | 330 | rla | 181 425 | 8270 (1) |
| Bis(2-chloroethoxy)methane | <100 | mg/Kg | 06/03/1994 | 330 | rla | 181 425 | 8270 (1) |
| Bis(2-chloroethyl)ether | <100 | mg/Kg | 06/03/1994 | 330 | rla | 181 425 | 8270 (1) |
| Bis(2-chloroisopropyl)ether | <100 | mg/Kg | 06/03/1994 | 330 | rla | 181 425 | 8270 (1) |

See case narrative.

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# ANALYTICAL REPORT

Ms. Mary Ripp
ECOLOGY & ENVIRONMENT, INC
111 West Jackson Blvd.
Chicago, IL 60604

06/09/1994

Sample No. : 262671

NET Job No.: 94.03926

Sample Description: D002; Grab
2T 2054; T05-9405-807

Date Taken: 05/27/1994
Time Taken: 10:45
IEPA Cert. No. 100221

Date Received: 05/31/1994
Time Received: 10:30
WDNR Cert. No. 999447130

| Parameter | Results | Units | Date of Analysis | Method PQL | Analyst | Batch No. Prep/Run | Analytical Method |
|---|---|---|---|---|---|---|---|
| Bis(2-ethylhexyl)phthalate | <100 | mg/Kg | 06/03/1994 | 330 | rla | 181 425 | 8270 (1) |
| 4-Bromophenyl phenyl ether | <100 | mg/Kg | 06/03/1994 | 330 | rla | 181 425 | 8270 (1) |
| 2-Chloronaphthalene | <100 | mg/Kg | 06/03/1994 | 330 | rla | 181 425 | 8270 (1) |
| 4-Chlorophenyl phenyl ether | <100 | mg/Kg | 06/03/1994 | 330 | rla | 181 425 | 8270 (1) |
| Chrysene | <100 | mg/Kg | 06/03/1994 | 330 | rla | 181 425 | 8270 (1) |
| Dibenzo(a,h)anthracene | <100 | mg/Kg | 06/03/1994 | 330 | rla | 181 425 | 8270 (1) |
| Di-n-butyl phthalate | <100 | mg/Kg | 06/03/1994 | 330 | rla | 181 425 | 8270 (1) |
| 1,2-Dichlorobenzene | <100 | mg/Kg | 06/03/1994 | 330 | rla | 181 425 | 8270 (1) |
| 1,3-Dichlorobenzene | <100 | mg/Kg | 06/03/1994 | 330 | rla | 181 425 | 8270 (1) |
| 1,4-Dichlorobenzene | <100 | mg/Kg | 06/03/1994 | 330 | rla | 181 425 | 8270 (1) |
| 3,3'-Dichlorobenzidine | <200 | mg/Kg | 06/03/1994 | 660 | rla | 181 425 | 8270 (1) |
| Diethyl phthalate | <100 | mg/Kg | 06/03/1994 | 330 | rla | 181 425 | 8270 (1) |
| Dimethyl phthalate | <100 | mg/Kg | 06/03/1994 | 330 | rla | 181 425 | 8270 (1) |
| 2,4-Dinitrotoluene | <100 | mg/Kg | 06/03/1994 | 330 | rla | 181 425 | 8270 (1) |
| 2,6-Dinitrotoluene | 100 | mg/Kg | 06/03/1994 | 330 | rla | 181 425 | 8270 (1) |
| Di-n-octyl phthalate | <100 | mg/Kg | 06/03/1994 | 330 | rla | 181 425 | 8270 (1) |
| Fluoranthene | <100 | mg/Kg | 06/03/1994 | 330 | rla | 181 425 | 8270 (1) |
| Fluorene | <100 | mg/Kg | 06/03/1994 | 330 | rla | 181 425 | 8270 (1) |
| Hexachlorobenzene | <100 | mg/Kg | 06/03/1994 | 330 | rla | 181 425 | 8270 (1) |
| Hexachlorobutadiene | <100 | mg/Kg | 06/03/1994 | 330 | rla | 181 425 | 8270 (1) |
| Hexachlorocyclopentadiene | <100 | mg/Kg | 06/03/1994 | 330 | rla | 181 425 | 8270 (1) |
| Hexachloroethane | <100 | mg/Kg | 06/03/1994 | 330 | rla | 181 425 | 8270 (1) |
| Indeno(1,2,3-cd)pyrene | <100 | mg/Kg | 06/03/1994 | 330 | rla | 181 425 | 8270 (1) |
| Isophorone | <100 | mg/Kg | 06/03/1994 | 330 | rla | 181 425 | 8270 (1) |
| Naphthalene | 120 | mg/Kg | 06/03/1994 | 330 | rla | 181 425 | 8270 (1) |
| Nitrobenzene | <100 | mg/Kg | 06/03/1994 | 330 | rla | 181 425 | 8270 (1) |
| N-Nitrosodimethylamine | <100 | mg/Kg | 06/03/1994 | 330 | rla | 181 425 | 8270 (1) |
| N-Nitrosodi-n-propylamine | <100 | mg/Kg | 06/03/1994 | 330 | rla | 181 425 | 8270 (1) |
| N-Nitrosodiphenylamine | <100 | mg/Kg | 06/03/1994 | 330 | rla | 181 425 | 8270 (1) |
| Phenanthrene | 380 | mg/Kg | 06/03/1994 | 330 | rla | 181 425 | 8270 (1) |

See case narrative.

NATIONAL ENVIRONMENTAL TESTING, INC.

Bartlett Division
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# ANALYTICAL REPORT

Ms. Mary Ripp
ECOLOGY & ENVIRONMENT, INC
111 West Jackson Blvd.
Chicago, IL 60604

06/09/1994

Sample No. : 262671

NET Job No.: 94.03926

Sample Description: D002; Grab
2T 2054; T05-9405-807

Date Taken: 05/27/1994
Time Taken: 10:45
IEPA Cert. No. 100221

Date Received: 05/31/1994
Time Received: 10:30
WDNR Cert. No. 999447130

| Parameter | Results | Units | Date of Analysis | Method PQL | Analyst | Batch No. Prep/Run | Analytical Method |
|---|---|---|---|---|---|---|---|
| Pyrene | <100 | mg/Kg | 06/03/1994 | 330 | rla | 181 425 | 8270 (1) |
| 1,2,4-Trichlorobenzene | <100 | mg/Kg | 06/03/1994 | 330 | rla | 181 425 | 8270 (1) |
| Surr: Phenol-d6 | 0 | % | 06/03/1994 | 10-94 | rla | 181 425 | 8270 (1) |
| Surr: 2-Fluorophenol | 0 | % | 06/03/1994 | 21-100 | rla | 181 425 | 8270 (1) |
| Surr: Nitrobenzene-d5 | 0 | % | 06/03/1994 | 35-114 | rla | 181 425 | 8270 (1) |
| Surr: 2-Fluorobiphenyl | 0 | % | 06/03/1994 | 43-116 | rla | 181 425 | 8270 (1) |
| Surr: Terphenyl-d14 | 0 | % | 06/03/1994 | 33-141 | rla | 181 425 | 8270 (1) |
| Surr: 2,4,6-Tribromophenol | 0 | % | 06/03/1994 | 10-123 | rla | 181 425 | 8270 (1) |
| VOLATILES - 8240 NONAQUEOUS | | | | | | | |
| Acrolein | <100,000 | ug/Kg | 06/04/1994 | 100 | adl | 412 | 8240 (1) |
| Acrylonitrile | <100,000 | ug/Kg | 06/04/1994 | 100 | adl | 412 | 8240 (1) |
| Benzene | <5,000 | ug/Kg | 06/04/1994 | 5.0 | adl | 412 | 8240 (1) |
| Bromodichloromethane | <5,000 | ug/Kg | 06/04/1994 | 5.0 | adl | 412 | 8240 (1) |
| Bromoform | <5,000 | ug/Kg | 06/04/1994 | 5.0 | adl | 412 | 8240 (1) |
| Bromomethane | <10,000 | ug/Kg | 06/04/1994 | 10 | adl | 412 | 8240 (1) |
| Carbon tetrachloride | <5,000 | ug/Kg | 06/04/1994 | 5.0 | adl | 412 | 8240 (1) |
| Chlorobenzene | <5,000 | ug/Kg | 06/04/1994 | 5.0 | adl | 412 | 8240 (1) |
| Chloroethane | <10,000 | ug/Kg | 06/04/1994 | 10 | adl | 412 | 8240 (1) |
| 2-Chloroethylvinyl ether | <10,000 | ug/Kg | 06/04/1994 | 10 | adl | 412 | 8240 (1) |
| Chloroform | <5,000 | ug/Kg | 06/04/1994 | 5.0 | adl | 412 | 8240 (1) |
| Chloromethane | <10,000 | ug/Kg | 06/04/1994 | 10 | adl | 412 | 8240 (1) |
| Dibromochloromethane | <5,000 | ug/Kg | 06/04/1994 | 5.0 | adl | 412 | 8240 (1) |
| 1,2-Dichlorobenzene | <5,000 | ug/Kg | 06/04/1994 | 5.0 | adl | 412 | 8240 (1) |
| 1,3-Dichlorobenzene | <5,000 | ug/Kg | 06/04/1994 | 5.0 | adl | 412 | 8240 (1) |
| 1,4-Dichlorobenzene | <5,000 | ug/Kg | 06/04/1994 | 5.0 | adl | 412 | 8240 (1) |
| 1,1-Dichloroethane | 5,500 | ug/Kg | 06/04/1994 | 5.0 | adl | 412 | 8240 (1) |
| 1,2-Dichloroethane | <5,000 | ug/Kg | 06/04/1994 | 5.0 | adl | 412 | 8240 (1) |
| 1,1-Dichloroethene | <5,000 | ug/Kg | 06/04/1994 | 5.0 | adl | 412 | 8240 (1) |
| trans-1,2-Dichloroethene | <5,000 | ug/Kg | 06/04/1994 | 5.0 | adl | 412 | 8240 (1) |

See case narrative.

NATIONAL ENVIRONMENTAL TESTING, INC.

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# ANALYTICAL REPORT

Ms. Mary Ripp
ECOLOGY & ENVIRONMENT, INC
111 West Jackson Blvd.
Chicago, IL 60604

06/09/1994

Sample No. : 262671

NET Job No.: 94.03926

Sample Description: D002; Grab
2T 2054; T05-9405-807

Date Taken: 05/27/1994
Time Taken: 10:45
IEPA Cert. No. 100221

Date Received: 05/31/1994
Time Received: 10:30
WDNR Cert. No. 999447130

| Parameter | Results | Units | Date of Analysis | Method PQL | Analyst | Batch No. Prep/Run | Analytical Method |
|---|---|---|---|---|---|---|---|
| cis-1,2-Dichloroethene | <5,000 | ug/Kg | 06/04/1994 | 5.0 | adl | 412 | 8240 (1) |
| 1,2-Dichloropropane | <5,000 | ug/Kg | 06/04/1994 | 5.0 | adl | 412 | 8240 (1) |
| cis-1,3-Dichloropropene | <5,000 | ug/Kg | 06/04/1994 | 5.0 | adl | 412 | 8240 (1) |
| trans-1,3-Dichloropropene | <5,000 | ug/Kg | 06/04/1994 | 5.0 | adl | 412 | 8240 (1) |
| Ethyl benzene | 21,000 | ug/Kg | 06/04/1994 | 5.0 | adl | 412 | 8240 (1) |
| Methylene chloride | 12,200,000 * | ug/Kg | 06/04/1994 | 5.0 | adl | 412 | 8240 (1) |
| 1,1,2,2-Tetrachloroethane | <5,000 | ug/Kg | 06/04/1994 | 5.0 | adl | 412 | 8240 (1) |
| Tetrachloroethene | <5,000 | ug/Kg | 06/04/1994 | 5.0 | adl | 412 | 8240 (1) |
| Toluene | 165,000 | ug/Kg | 06/04/1994 | 5.0 | adl | 412 | 8240 (1) |
| 1,1,1-Trichloroethane | 265,000 | ug/Kg | 06/04/1994 | 5.0 | adl | 412 | 8240 (1) |
| 1,1,2-Trichloroethane | <5,000 | ug/Kg | 06/04/1994 | 5.0 | adl | 412 | 8240 (1) |
| Trichloroethene | 9,500 | ug/Kg | 06/04/1994 | 5.0 | adl | 412 | 8240 (1) |
| Trichlorofluoromethane | <5,000 | ug/Kg | 06/04/1994 | 5.0 | adl | 412 | 8240 (1) |
| Vinyl chloride | <10,000 | ug/Kg | 06/04/1994 | 10 | adl | 412 | 8240 (1) |
| Xylenes, Total | 138,000 | ug/Kg | 06/04/1994 | 5.0 | adl | 412 | 8240 (1) |
| Surr: 1,2-Dichloroethane-d4 | 95 | % | 06/04/1994 | 70-121 | adl | 412 | 8240 (1) |
| Surr: Toluene-d8 | 100 | % | 06/04/1994 | 81-117 | adl | 412 | 8240 (1) |
| Surr: Bromofluorobenzene | 168 | % | 06/04/1994 | 74-121 | adl | 412 | 8240 (1) |
| F001-5 ALCOHOL COMPOUNDS | | | | | | | |
| Butanol | <120 | ug/g | 06/02/1994 | 20 | tms | 21 | 8015 (1) |
| 2-Ethoxyethanol | 15,600 | ug/g | 06/02/1994 | 20 | tms | 21 | 8015 (1) |
| Isobutanol | <590 | ug/g | 06/02/1994 | 20 | tms | 21 | 8015 (1) |
| Methanol | 1,200 | ug/g | 06/02/1994 | 20 | tms | 21 | 8015 (1) |

See case narrative.

* Parameter analysis performed at a 20,000x dilution

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# CASE NARRATIVE

Ms. Mary Ripp
ECOLOGY & ENVIRONMENT, INC
111 West Jackson Blvd.
Chicago, IL 60604

06/09/1994

NET Job Number: 94.03926

Project Description: 2T 2054; T05-9405-807

| Sample Number | Sample Description | Date Taken | Date Received |
|---|---|---|---|
| 262670 | FS-01; Grab | 05/27/1994 | 05/31/1994 |
| 262671 | D002; Grab | 05/27/1994 | 05/31/1994 |

Sample analysis in support of the project referenced above has been completed and results are presented on the following pages. Please refer to the enclosed "Key to Abbreviations" for definition of terms.

Due to the oily matrix of sample 262671, the following comments should be noted for the indicated fractions;

**Volatile Organic Analysis**

A medium level extraction of the sample was necessary for analysis. As a result, the results are reported at a 5000x dilution. The result obtained for methylene chloride at this dilution was above calibration range, and a further dilution of 20,000x was required.

The recovery of Bromofluorobenzene was above control limits. This was due to matrix interference.

**Semi-Volatile Organic Analysis**

The sample was prepared for analysis by diluting 1.0 g to a final volume of 10 mls. As a result, the results are reported at a 300x dilution. Any surrogate present was diluted out.

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**Alcohol Analysis**

The reporting limits are elevated due to matrix interference.

Due to the nonaqueous nature of the sample, the results reported have been density corrected.

This Quality Control report is generated on a batch basis. All information contained in this report is for the analytical batch(es) in which your samples were analyzed. These results apply only to the samples analyzed. Reproduction of this report only in whole is permitted. Please refer to the enclosed "Key to Abbreviations" for definition of terms. Should you have questions regarding procedures or results, please do not hesitate to call. NET has been pleased to provide these analytical services for you.

Approved By:

Ray Kalicki
Quality Assurance Coordinator

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# QUALITY CONTROL REPORT

## CONTINUING CALIBRATION VERIFICATION

ECOLOGY & ENVIRONMENT, INC
111 West Jackson Blvd.
Chicago, IL 60604

06/09/1994

NET Job Number: 94.03926

Ms. Mary Ripp

| Analyte | Run Batch Number | CCV True Conc. | Conc. Found | Percent Recovery |
|---|---|---|---|---|
| **ACID CMPDS - 8270 NONAQUEOUS** | | | | |
| Surr: 2-Fluorophenol | 425 | 50.0 | 50.0 | 100.0 |
| Surr: Phenol-d6 | 425 | 100 | 108 | 108.0 |
| **BASE/NEUTRALS-8270 NONAQUEOUS** | | | | |
| Acenaphthene | 425 | 50.0 | 51.0 | 102.0 |
| Benzo(a)pyrene | 425 | 50.0 | 53.4 | 106.8 |
| 1,4-Dichlorobenzene | 425 | 50.0 | 52.5 | 105.0 |
| Di-n-octyl phthalate | 425 | 50.0 | 57.7 | 115.4 |
| Surr: 2-Fluorobiphenyl | 425 | 50.0 | 50.7 | 101.4 |
| Fluoranthene | 425 | 50.0 | 50.6 | 101.2 |
| Hexachlorobutadiene | 425 | 50.0 | 52.0 | 104.0 |
| Surr: Nitrobenzene-d5 | 425 | 50.0 | 54.1 | 108.2 |
| N-Nitrosodiphenylamine | 425 | 50.0 | 54.1 | 108.2 |
| **VOLATILES - 8240 NONAQUEOUS** | | | | |
| Chloroform | 412 | 50.0 | 52.2 | 104.4 |
| 1,1-Dichloroethane | 412 | 50.0 | 54.5 | 109.0 |
| 1,2-Dichloropropane | 412 | 50.0 | 50.7 | 101.4 |
| Ethyl benzene | 412 | 50.0 | 57.1 | 114.2 |
| Toluene | 412 | 50.0 | 53.4 | 106.8 |
| Vinyl chloride | 412 | 50.0 | 53.1 | 106.2 |

CCV - Continuing Calibration Verification

OCEAN GROUP

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# QUALITY CONTROL REPORT

## CONTINUING CALIBRATION VERIFICATION

ECOLOGY & ENVIRONMENT, INC
111 West Jackson Blvd.
Chicago, IL 60604

06/09/1994

NET Job Number: 94.03926

Ms. Mary Ripp

| Analyte | Run Batch Number | CCV True Conc. | Conc. Found | Percent Recovery |
|---|---|---|---|---|
| F001-5 ALCOHOL COMPOUNDS | | | | |
| Butanol | 21 | 20.0 | 21.5 | 107.5 |
| 2-Ethoxyethanol | 21 | 20.3 | 21.3 | 104.9 |
| Isobutanol | 21 | 19.9 | 21.5 | 108.0 |
| Methanol | 21 | 20.0 | 22.2 | 111.0 |

CCV - Continuing Calibration Verification

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# QUALITY CONTROL REPORT

## BLANK ANALYSIS

ECOLOGY & ENVIRONMENT, INC
111 West Jackson Blvd.
Chicago, IL 60604

06/09/1994

NET Job Number: 94.03926

Ms. Mary Ripp

| Analyte | Prep Batch Number | Run Batch Number | Blank Analysis Results | Units | Reporting Limit | Analytical Method |
|---|---|---|---|---|---|---|
| ACID CMPDS - 8270 NONAQUEOUS | | | | | | 8270 (1) |
| 4-Chloro-3-methylphenol | 180 | 414 | <330 | ug/Kg | 330 | 8270 (1) |
| 2-Chlorophenol | 180 | 414 | <330 | ug/Kg | 330 | 8270 (1) |
| 2,4-Dichlorophenol | 180 | 414 | <330 | ug/Kg | 330 | 8270 (1) |
| 2,4-Dimethylphenol | 180 | 414 | <330 | ug/Kg | 330 | 8270 (1) |
| 2,4-Dinitrophenol | 180 | 414 | <1600 | ug/Kg | 1,650 | 8270 (1) |
| 2-Methyl-4,6-dinitrophenol | 180 | 414 | <1600 | ug/Kg | 1,650 | 8270 (1) |
| 2-Nitrophenol | 180 | 414 | <330 | ug/Kg | 330 | 8270 (1) |
| 4-Nitrophenol | 180 | 414 | <1600 | ug/Kg | 1,650 | 8270 (1) |
| Pentachlorophenol | 180 | 414 | <1600 | ug/Kg | 1,650 | 8270 (1) |
| Phenol | 180 | 414 | <330 | ug/Kg | 330 | 8270 (1) |
| 2,4,6-Trichlorophenol | 180 | 414 | <330 | ug/Kg | 330 | 8270 (1) |
| Surr: Phenol-d6 | 180 | 414 | 56 | % | 10-94 | 8270 (1) |
| Surr: 2-Fluorophenol | 180 | 414 | 52 | % | 21-100 | 8270 (1) |
| Surr: 2,4,6-Tribromophenol | 180 | 414 | 81 | % | 10-123 | 8270 (1) |
| BASE/NEUTRALS-8270 NONAQUEOUS | | | | | | 8270 (1) |
| Acenaphthene | 180 | 414 | <330 | ug/Kg | 330 | 8270 (1) |
| Acenaphthylene | 180 | 414 | <330 | ug/Kg | 330 | 8270 (1) |
| Anthracene | 180 | 414 | <330 | ug/Kg | 330 | 8270 (1) |
| Benzidine | 180 | 414 | <1600 | ug/Kg | 1,650 | 8270 (1) |
| Benzo(a)anthracene | 180 | 414 | <330 | ug/Kg | 330 | 8270 (1) |
| Benzo(b)fluoranthene | 180 | 414 | <330 | ug/Kg | 330 | 8270 (1) |
| Benzo(k)fluoranthene | 180 | 414 | <330 | ug/Kg | 330 | 8270 (1) |
| Benzo(g,h,i)perylene | 180 | 414 | <330 | ug/Kg | 330 | 8270 (1) |
| Benzo(a)pyrene | 180 | 414 | <330 | ug/Kg | 330 | 8270 (1) |
| Benzyl butyl phthalate | 180 | 414 | <330 | ug/Kg | 330 | 8270 (1) |
| Bis(2-chloroethoxy)methane | 180 | 414 | <330 | ug/Kg | 330 | 8270 (1) |

Advisory Control Limits for Blanks:

All compounds should be less than the Reporting Limit, except for phthalate esters, toluene, methylene chloride, acetone and chloroform should be less than 5 times the Reporting Limit.

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# QUALITY CONTROL REPORT

## BLANK ANALYSIS

ECOLOGY & ENVIRONMENT, INC
111 West Jackson Blvd.
Chicago, IL 60604

06/09/1994

NET Job Number: 94.03926

Ms. Mary Ripp

| Analyte | Prep Batch Number | Run Batch Number | Blank Analysis Results | Units | Reporting Limit | Analytical Method |
|---|---|---|---|---|---|---|
| Bis(2-chloroethyl)ether | 180 | 414 | <330 | ug/Kg | 330 | 8270 (1) |
| Bis(2-chloroisopropyl)ether | 180 | 414 | <330 | ug/Kg | 330 | 8270 (1) |
| Bis(2-ethylhexyl)phthalate | 180 | 414 | <330 | ug/Kg | 330 | 8270 (1) |
| 4-Bromophenyl phenyl ether | 180 | 414 | <330 | ug/Kg | 330 | 8270 (1) |
| 2-Chloronaphthalene | 180 | 414 | <330 | ug/Kg | 330 | 8270 (1) |
| 4-Chlorophenyl phenyl ether | 180 | 414 | <330 | ug/Kg | 330 | 8270 (1) |
| Chrysene | 180 | 414 | <330 | ug/Kg | 330 | 8270 (1) |
| Dibenzo(a,h)anthracene | 180 | 414 | <330 | ug/Kg | 330 | 8270 (1) |
| Di-n-butyl phthalate | 180 | 414 | <330 | ug/Kg | 330 | 8270 (1) |
| 1,2-Dichlorobenzene | 180 | 414 | <330 | ug/Kg | 330 | 8270 (1) |
| 1,3-Dichlorobenzene | 180 | 414 | <330 | ug/Kg | 330 | 8270 (1) |
| 1,4-Dichlorobenzene | 180 | 414 | <330 | ug/Kg | 330 | 8270 (1) |
| 3,3'-Dichlorobenzidine | 180 | 414 | <660 | ug/Kg | 660 | 8270 (1) |
| Diethyl phthalate | 180 | 414 | <330 | ug/Kg | 330 | 8270 (1) |
| Dimethyl phthalate | 180 | 414 | <330 | ug/Kg | 330 | 8270 (1) |
| 2,4-Dinitrotoluene | 180 | 414 | <330 | ug/Kg | 330 | 8270 (1) |
| 2,6-Dinitrotoluene | 180 | 414 | <330 | ug/Kg | 330 | 8270 (1) |
| Di-n-octyl phthalate | 180 | 414 | <330 | ug/Kg | 330 | 8270 (1) |
| Fluoranthene | 180 | 414 | <330 | ug/Kg | 330 | 8270 (1) |
| Fluorene | 180 | 414 | <330 | ug/Kg | 330 | 8270 (1) |
| Hexachlorobenzene | 180 | 414 | <330 | ug/Kg | 330 | 8270 (1) |
| Hexachlorobutadiene | 180 | 414 | <330 | ug/Kg | 330 | 8270 (1) |
| Hexachlorocyclopentadiene | 180 | 414 | <330 | ug/Kg | 330 | 8270 (1) |
| Hexachloroethane | 180 | 414 | <330 | ug/Kg | 330 | 8270 (1) |
| Indeno(1,2,3-cd)pyrene | 180 | 414 | <330 | ug/Kg | 330 | 8270 (1) |
| Isophorone | 180 | 414 | <330 | ug/Kg | 330 | 8270 (1) |
| Naphthalene | 180 | 414 | <330 | ug/Kg | 330 | 8270 (1) |
| Nitrobenzene | 180 | 414 | <330 | ug/Kg | 330 | 8270 (1) |
| N-Nitrosodimethylamine | 180 | 414 | <330 | ug/Kg | 330 | 8270 (1) |

Advisory Control Limits for Blanks:

All compounds should be less than the Reporting Limit, except for phthalate esters, toluene, methylene chloride, acetone and chloroform should be less than 5 times the Reporting Limit.

NATIONAL ENVIRONMENTAL TESTING, INC.

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# QUALITY CONTROL REPORT

## BLANK ANALYSIS

ECOLOGY & ENVIRONMENT, INC
111 West Jackson Blvd.
Chicago, IL 60604

06/09/1994

NET Job Number: 94.03926

Ms. Mary Ripp

| Analyte | Prep Batch Number | Run Batch Number | Blank Analysis Results | Units | Reporting Limit | Analytical Method |
|---|---|---|---|---|---|---|
| N-Nitrosodi-n-propylamine | 180 | 414 | <330 | ug/Kg | 330 | 8270 (1) |
| N-Nitrosodiphenylamine | 180 | 414 | <330 | ug/Kg | 330 | 8270 (1) |
| Phenanthrene | 180 | 414 | <330 | ug/Kg | 330 | 8270 (1) |
| Pyrene | 180 | 414 | <330 | ug/Kg | 330 | 8270 (1) |
| 1,2,4-Trichlorobenzene | 180 | 414 | <330 | ug/Kg | 330 | 8270 (1) |
| Surr: Nitrobenzene-d5 | 180 | 414 | 57 | % | 35-114 | 8270 (1) |
| Surr: 2-Fluorobiphenyl | 180 | 414 | 59 | % | 43-116 | 8270 (1) |
| Surr: Terphenyl-d14 | 180 | 414 | 84 | % | 33-141 | 8270 (1) |
| VOLATILES - 8240 NONAQUEOUS | | | | | | 8240 (1) |
| Acrolein | | 412 | <100 | ug/Kg | 100 | 8240 (1) |
| Acrylonitrile | | 412 | <100 | ug/Kg | 100 | 8240 (1) |
| Benzene | | 412 | <5.0 | ug/Kg | 5.0 | 8240 (1) |
| Bromodichloromethane | | 412 | <5.0 | ug/Kg | 5.0 | 8240 (1) |
| Bromoform | | 412 | <5.0 | ug/Kg | 5.0 | 8240 (1) |
| Carbon tetrachloride | | 412 | <5.0 | ug/Kg | 5.0 | 8240 (1) |
| Chlorobenzene | | 412 | <5.0 | ug/Kg | 5.0 | 8240 (1) |
| 2-Chloroethylvinyl ether | | 412 | <10.0 | ug/Kg | 10.0 | 8240 (1) |
| Chloroethane | | 412 | <10.0 | ug/Kg | 10.0 | 8240 (1) |
| Chloroform | | 412 | <5.0 | ug/Kg | 5.0 | 8240 (1) |
| Dibromochloromethane | | 412 | <5.0 | ug/Kg | 5.0 | 8240 (1) |
| 1,4-Dichlorobenzene | | 412 | <5.0 | ug/Kg | 5.0 | 8240 (1) |
| 1,1-Dichloroethane | | 412 | <5.0 | ug/Kg | 5.0 | 8240 (1) |
| 1,2-Dichloroethane | | 412 | <5.0 | ug/Kg | 5.0 | 8240 (1) |
| 1,1-Dichloroethene | | 412 | <5.0 | ug/Kg | 5.0 | 8240 (1) |
| trans-1,2-Dichloroethene | | 412 | <5.0 | ug/Kg | 5.0 | 8240 (1) |
| 1,2-Dichloropropane | | 412 | <5.0 | ug/Kg | 5.0 | 8240 (1) |
| cis-1,3-Dichloropropene | | 412 | <5.0 | ug/Kg | 5.0 | 8240 (1) |
| trans-1,3-Dichloropropene | | 412 | <5.0 | ug/Kg | 5.0 | 8240 (1) |

Advisory Control Limits for Blanks:

All compounds should be less than the Reporting Limit, except for phthalate esters, toluene, methylene chloride, acetone and chloroform should be less than 5 times the Reporting Limit.

NATIONAL ENVIRONMENTAL TESTING, INC.

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# QUALITY CONTROL REPORT

## BLANK ANALYSIS

ECOLOGY & ENVIRONMENT, INC
111 West Jackson Blvd.
Chicago, IL 60604

06/09/1994

NET Job Number: 94.03926

Ms. Mary Ripp

| Analyte | Prep Batch Number | Run Batch Number | Blank Analysis Results | Units | Reporting Limit | Analytical Method |
|---|---|---|---|---|---|---|
| Ethyl benzene | | 412 | <5.0 | ug/Kg | 5.0 | 8240 (1) |
| Methylene chloride | | 412 | <5.0 | ug/Kg | 5.0 | 8240 (1) |
| Tetrachloroethene | | 412 | <5.0 | ug/Kg | 5.0 | 8240 (1) |
| Toluene | | 412 | <5.0 | ug/Kg | 5.0 | 8240 (1) |
| 1,1,1-Trichloroethane | | 412 | <5.0 | ug/Kg | 5.0 | 8240 (1) |
| 1,1,2-Trichloroethane | | 412 | <5.0 | ug/Kg | 5.0 | 8240 (1) |
| Trichloroethene | | 412 | <5.0 | ug/Kg | 5.0 | 8240 (1) |
| Trichlorofluoromethane | | 412 | <5.0 | ug/Kg | 5.0 | 8240 (1) |
| Vinyl chloride | | 412 | <10.0 | ug/Kg | 10.0 | 8240 (1) |
| Xylenes, Total | | 412 | <5.0 | ug/Kg | 5.0 | 8240 (1) |
| Surr: 1,2-Dichloroethane-d4 | | 412 | 100 | % | 70-121 | 8240 (1) |
| Surr: Toluene-d8 | | 412 | 101 | % | 81-117 | 8240 (1) |
| Surr: Bromofluorobenzene | | 412 | 99 | % | 74-121 | 8240 (1) |
| F001-5 ALCOHOL COMPOUNDS | | | | | | 8015 (1) |
| Butanol | | 21 | <1.0 | mg/L | 20 | 8015 (1) |
| 2-Ethoxyethanol | | 21 | <10 | mg/L | 20 | 8015 (1) |
| Isobutanol | | 21 | <1.0 | mg/L | 20 | 8015 (1) |
| Methanol | | 21 | <1.0 | mg/L | 20 | 8015 (1) |

Advisory Control Limits for Blanks:

All compounds should be less than the Reporting Limit, except for phthalate esters, toluene, methylene chloride, acetone and chloroform should be less than 5 times the Reporting Limit.

NATIONAL ENVIRONMENTAL TESTING, INC.

Bartlett Division
350 W. Bartlett Rd.
Bartlett, IL 60103
Tel: (708) 289-3100
Fax: (708) 289-5445

# QUALITY CONTROL REPORT

## LABORATORY CONTROL STANDARD

ECOLOGY & ENVIRONMENT, INC
111 West Jackson Blvd.
Chicago, IL 60604

06/09/1994

NET Job Number: 94.03926

Ms. Mary Ripp

| Analyte | Prep Batch Number | Run Batch Number | True Conc. | Conc. Found | LCS % Recovery |
|---|---|---|---|---|---|
| VOLATILES - 8240 NONAQUEOUS | | | | | |
| Benzene | | 412 | 20.0 | 22.0 | 110.0 |
| Chlorobenzene | | 412 | 20.0 | 22.0 | 110.0 |
| Chloroform | | 412 | 20.0 | 22.0 | 110.0 |
| 1,1-Dichloroethene | | 412 | 20.0 | 24.0 | 120.0 |
| 1,2-Dichloropropane | | 412 | 20.0 | 22.0 | 110.0 |
| Toluene | | 412 | 20.0 | 22.0 | 110.0 |
| Trichloroethene | | 412 | 20.0 | 21.0 | 105.0 |

Advisory Control Limits - Inorganics - LCS recovery should be 80 - 120%.

NET Midwest, Bartlett Division

KEY TO ABBREVIATIONS and METHOD REFERENCES

| | | |
|---|---|---|
| < | : | Less than; When appearing in the results column indicates the analyte was not detected at or above the reported value. |
| mg/L | : | Concentration in units of milligrams of analyte per liter of sample. Measurement used for aqueous samples. Can also be expressed as parts per million (ppm). |
| ug/g | : | Concentration in units of micrograms of analyte per gram of sample. Measurement used for non-aqueous samples. Can also be expressed as parts per million (ppm) or mg/Kg. |
| ug/L | : | Concentration in units of micrograms of analyte per liter of sample. Measurement used for aqueous samples. Can also be expressed as parts per billion (ppb). |
| ug/Kg | : | Concentration in units of micrograms of analyte per kilogram of sample. Measurement used for non-aqueous samples. Can also be expressed as parts per billion (ppb). |
| B | : | Sample result flag indicating that the analyte was also found in the method blank analysis. The value after the B indicates the concentration found in the blank analysis. |
| D | : | Sample result flag indicating that the reported concentration is from an analysis performed at a dilution. The value following the D indicates the dilution factor of the analysis. |
| J | : | Sample result flag indicating that the reported concentration is below the routine reporting limit but greater than the Method Detection Limit. The value should be considered estimated. |
| TCLP | : | These initials appearing in front of an analyte name indicate that the Toxicity Characteristic Leaching Procedure (TCLP) was performed for this test. |
| % | : | Percent; To convert ppm to %, divide the result by 10,000.<br>To convert % to ppm, multiply the result by 10,000. |
| Dry Weight (dw) | : | When indicated, the results are reported on a dry weight basis. The contribution of the moisture content in the sample is subtracted when calculating the concentration of the analyte. |
| ICP | : | Indicates analysis was performed using Inductively Coupled Plasma Spectroscopy. |
| AA | : | Indicates analysis was performed using Atomic Absorption Spectroscopy. |
| GFAA | : | Indicates analysis was performed using Graphite Furnace Atomic Absorption Spectroscopy. |
| PQL | : | Practical Quantitation Limit; the lowest level that can be reliably achieved within specified limits of precision and accuracy during routine laboratory operating conditions. |

Method References

(1) Methods 1000 through 9999: see "Test Methods for Evaluating Solid Waste", USEPA SW-846, 3rd Edition, 1986.

(2) ASTM "American Society for Testing Materials

(3) Methods 100 through 499: see "Methods for Chemical Analysis of Water and Wastes", USEPA, 600/4-79-020, Rev. 1983.

(4) See "Standard Methods for the Examination of Water and Wastewater", 17th Ed, APHA, 1989.

(5) Methods 600 through 625: see "Guidelines Establishing Test Procedures for the Analysis of Pollutants", USEPA Federal Register Vol. 49 No. 209, October 1984.

(6) Methods 500 through 599: see "Methods for the Determination of Organic Compounds in Drinking Water," USEPA 600/4-88/039, Rev. 1988.

IEA
An Aquarion Company

Client: E & E
IEA Job#: CH940964
Project #: T05-9405-807

ANALYTE LIST
mg/L

Matrix: LIQUID

| | Client ID | D001 | D003 | PR-1 | | | | |
|---|---|---|---|---|---|---|---|---|
| | Lab ID | 940964 001 | 940964 003 | 940964 004 | | | Date Analyzed | PQL |
| Analyte | Method | | | | | | | |
| Arsenic | 6010 | 0.57 | 12** | <0.5** | | | 06/03/94 | 0.1 |
| Barium | 6010 | 0.42 | <0.50 | <0.5 | | | 06/03/94 | 0.05 |
| Cadmium | 6010 | 0.0052 | <0.25 | <0.05 | | | 06/03/94 | 0.005 |
| Chromium | 6010 | 0.33 | 120000 | 24000 | | | 06/03/94 | 0.01 |
| Lead | 6010 | 0.50 | <2.5 | <0.50 | | | 06/03/94 | 0.05 |
| Mercury | 7470 | 0.0072 | <0.002 | <0.002 | | | 06/06/94 | 0.002 |
| Selenium | 6010 | <0.1 | <6.0* | <6.0* | | | 06/03/94 | 0.1 |
| Silver | 6010 | <0.01 | <0.50 | 0.14 | | | 06/03/94 | 0.01 |
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PQL = Practical Quantitation Limit

**Analysis method 7060 on 6/9/94 PQL#3 1mg/l PQL #4 0.5mg/l
* Analysis method 7740 on 6/9/94 PQL 6.0 mg/l

IEA
An Aquarion Company

CLIENT: E & E
CLIENT ID: BG-01
LAB ID: 940964006

## TCLP ANALYTICAL RESULTS

| EPA WASTE # | CONTAMINANT/ DATE LEACH:06/01/94 DATE EXTRACT:06/02/94 | | DATE ANALY | REG LIMIT (mg/L) | DETECTION LIMIT (mg/L) | AMOUNT DETECTED (mg/L) |
|---|---|---|---|---|---|---|
| | **METALS** | **METHOD** | | | | |
| D004 | Arsenic | 6010 | 06/03/94 | 5.0 | 0.1 | <0.1 |
| D005 | Barium | 6010 | 06/03/94 | 100.0 | 0.05 | 0.43 |
| D006 | Cadmium | 6010 | 06/08/94 | 1.0 | 0.005 | <0.005 |
| D007 | Chromium | 6010 | 06/08/94 | 5.0 | 0.01 | <0.01 |
| D008 | Lead | 6010 | 06/03/94 | 5.0 | 0.05 | <0.05 |
| D009 | Mercury | 7470 | 06/06/94 | 0.2 | 0.0002 | <0.0002 |
| D010 | Selenium | 6010 | 06/03/94 | 1.0 | 0.1 | <0.1 |
| D011 | Silver | 6010 | 06/08/94 | 5.0 | 0.01 | <0.01 |

IEA
An Aquarion Company

CLIENT: E & E
CLIENT ID: BK-01
LAB ID: 940964005

## TCLP ANALYTICAL RESULTS

| EPA WASTE # | CONTAMINANT/ DATE LEACH: 06/01/94 DATE EXTRACT: 06/02/94 | | DATE ANALY | REG LIMIT (mg/L) | DETECTION LIMIT (mg/L) | AMOUNT DETECTED (mg/L) |
|---|---|---|---|---|---|---|
| | **METALS** | **METHOD** | | | | |
| D004 | Arsenic | 6010 | 06/03/94 | 5.0 | 0.1 | 0.78 |
| D005 | Barium | 6010 | 06/03/94 | 100.0 | 0.05 | 0.54 |
| D006 | Cadmium | 6010 | 06/08/94 | 1.0 | 0.005 | 0.0073 |
| D007 | Chromium | 6010 | 06/03/94 | 5.0 | 0.01 | 630 |
| D008 | Lead | 6010 | 06/03/94 | 5.0 | 0.05 | 0.084 |
| D009 | Mercury | 7470 | 06/06/94 | 0.2 | 0.0002 | <0.0002 |
| D010 | Selenium | 6010 | 06/08/94 | 1.0 | 0.1 | <0.1 |
| D011 | Silver | 6010 | 06/08/94 | 5.0 | 0.01 | <0.01 |

IEA
An Aquarion Company

CLIENT: E & E
CLIENT ID: FS-01
LAB ID: 940964007

## TCLP ANALYTICAL RESULTS

| EPA WASTE # | CONTAMINANT/ DATE LEACH: 06/01/94 DATE EXTRACT: 06/02/94 | | DATE ANALY | REG LIMIT (mg/L) | DETECTION LIMIT (mg/L) | AMOUNT DETECTED (mg/L) |
|---|---|---|---|---|---|---|
| | **METALS** | **METHOD** | 06/03/94 | | | |
| D004 | Arsenic | 6010 | 06/03/94 | 5.0 | 0.1 | <0.1 |
| D005 | Barium | 6010 | 06/03/94 | 100.0 | 0.05 | 0.59 |
| D006 | Cadmium | 6010 | 06/08/94 | 1.0 | 0.005 | 0.033 |
| D007 | Chromium | 6010 | 06/08/94 | 5.0 | 0.01 | 11.0 |
| D008 | Lead | 7470 | 06/03/94 | 5.0 | 0.05 | <0.05 |
| D009 | Mercury | 6010 | 06/06/94 | 0.2 | 0.0002 | <0.0002 |
| D010 | Selenium | 6010 | 06/03/94 | 1.0 | 0.1 | <0.1 |
| D011 | Silver | 6010 | 06/03/94 | 5.0 | 0.01 | <0.01 |

IEA
An Aquarion Company

Client: E & E
IEA Job#: CH940964
Project #: T05-9405-807

ANALYTE LIST

Matrix: LIQUID

| | Client ID | BK-01 | BG-01 | FS-01 | | | | |
|---|---|---|---|---|---|---|---|---|
| | Lab ID | 940964 005 | 940964 006 | 940964 007 | | | Date Analyzed | PQL |
| Analyte | Method | | | | | | | |
| P.H. | 9045 | 9.9 | 3.2 | 7.7 | | | 05/31/94 | |
| Total Sulfide | 9030 | | | <10.0 | | | 06/02/94 | 10 mg/kg |
| Reactive Sulfide | 7.3 4.1 | | | <10.0 | | | 06/03/94 | 10 mg/kg |
| Total Cyanide | 9012 | | | 6.0 | | | 06/03/94 | 0.5mg/kg |
| Reactive Cyanide | 7.3 3.2 | | | <1.0 | | | 06/03/94 | 1 mg/kg |
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PQL = Practical Quantitation Limit

IEA
An Aquanon Company

Client: E & E
IEA Job#: CH940964
Project #: T05-9405-807

ANALYTE LIST

Matrix: LIQUID

| | Client ID | D001 | D003 | PR-1 | D002 | | | |
|---|---|---|---|---|---|---|---|---|
| | Lab ID | 940964 001 | 940964 003 | 940964 004 | 940964 002 | | Date Analyzed | PQL |
| Analyte | Method | | | | | | | |
| P.H. | 150.1 | <1.0 | <1.0 | 3.5 | | | 05/31/94 | |
| O.C. Flashpoint | 1010 | | | | >200 | | 06/06/94 | F |
| Total Sulfide | 9030 | | <10.0 | | | | 06/02/94 | 10 mg/kg |
| Reactive Sulfide | 7.3 4.1 | | <10.0 | | | | 06/03/94 | 10 mg/kg |
| Total Cyanide | 9010 | | <0.5 | | | | 06/03/94 | 0.5 mg/kg |
| Reactive Cyanide | 7.3 3.2 | | <1.0 | | | | 06/03/94 | 1 mg/kg |
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PQL = Practical Quantitation Limit

IEA
An Aquarion Company

# CASE NARRATIVE

Job #CH940964

**The 2nd flashpoint performed on 6-23-94 was a closed cup flashpoint. The previous analysis on 6-6-94 was an open cup flashpoint. The closed cup flashpoint captures more of the volotile vapors and, therefore, flashes at a lower temperature than an open cup flashpoint. Open cup flashpoint, on the other hand, is opened to the surrounding air and has less concentrated vapors as compared to a closed cup flashpoint.**

IEA
An Aquarion Company

Client: E & E
IEA Job#: CH940964
Project #: T05-9405-807

ANALYTE LIST

Matrix: Liquid

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | Client ID | D002 | | | | | | |
| | Lab ID | 940964 002 | | | | | Date Analyzed | PQL |
| Analyte | Method | | | | | | | |
| Closed Cup Flashpoint | V010 Modified | 115 | | | | | 6-23-94 | F |
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PQL = Practical Quantitation Limit

IEA
An Aquarion Company

CLIENT: E & E
CLIENT ID: EXTRACTION BLANK
LAB ID: FLUID #1

## TCLP ANALYTICAL RESULTS

| EPA WASTE # | CONTAMINANT/ DATE LEACH: 06/01/94 DATE EXTRACT: 06/02/94 | | DATE ANALY | REG LIMIT (mg/L) | DETECTION LIMIT (mg/L) | AMOUNT DETECTED (mg/L) |
|---|---|---|---|---|---|---|
| | **METALS** | **METHOD** | | | | |
| D004 | Arsenic | 6010 | 06/03/94 | 5.0 | 0.1 | <0.1 |
| D005 | Barium | 6010 | 06/03/94 | 100.0 | 0.05 | <0.05 |
| D006 | Cadmium | 6010 | 06/03/94 | 1.0 | 0.005 | <0.005 |
| D007 | Chromium | 6010 | 06/08/94 | 5.0 | 0.01 | 0.020 |
| D008 | Lead | 6010 | 06/03/94 | 5.0 | 0.05 | <0.05 |
| D009 | Mercury | 7470 | 06/06/94 | 0.2 | 0.0002 | <0.0002 |
| D010 | Selenium | 6010 | 06/03/94 | 1.0 | 0.1 | <0.1 |
| D011 | Silver | 6010 | 06/03/94 | 5.0 | 0.01 | <0.01 |

IEA
An Aquarion Company

CLIENT: E & E
CLIENT ID: EXTRACTION BLANK
LAB ID: FLUID #2

## TCLP ANALYTICAL RESULTS

| EPA WASTE # | CONTAMINANT/ DATE LEACH: 06/01/94 DATE EXTRACT: 06/02/94 | | DATE ANALY | REG LIMIT (mg/L) | DETECTION LIMIT (mg/L) | AMOUNT DETECTED (mg/L) |
|---|---|---|---|---|---|---|
| | METALS | METHOD | | | | |
| D004 | Arsenic | 6010 | 06/03/94 | 5.0 | 0.1 | <0.1 |
| D005 | Barium | 6010 | 06/03/94 | 100.0 | 0.05 | <0.05 |
| D006 | Cadmium | 6010 | 06/03/94 | 1.0 | 0.005 | <0.005 |
| D007 | Chromium | 6010 | 06/03/94 | 5.0 | 0.01 | <0.01 |
| D008 | Lead | 6010 | 06/03/94 | 5.0 | 0.05 | <0.05 |
| D009 | Mercury | 7470 | 06/09/94 | 0.2 | 0.0002 | <0.0002 |
| D010 | Selenium | 6010 | 06/03/94 | 1.0 | 0.1 | <0.1 |
| D011 | Silver | 6010 | 06/03/94 | 5.0 | 0.01 | <0.01 |